

NEW ISSUE
BOOK-ENTRY ONLY

RATINGS: Moody's: Aaa
Standard & Poor's: AAA
Fitch: AAA
(See "Ratings" herein)

In the opinion of Orrick, Herrington & Sutcliffe LLP, Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, compliance with certain covenants, interest on the Series 2005 Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, and all of the Series 2005 Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any County or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. In the further opinion of Bond Counsel, interest on the Series 2005 Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Bond Counsel observes that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. Bond Counsel expresses no opinion regarding any other tax consequences related to the ownership or disposition of, or the accrual or receipt of interest on, the Series 2005 Bonds. See "TAX MATTERS" in this Official Statement.

\$152,815,000
City and County of Honolulu
Wastewater System Revenue Bonds
(First Bond Resolution)
Senior Series 2005A and 2005B

Dated: Date of Delivery

Due: July 1, as shown on inside cover

The Series 2005 Bonds are issuable in fully registered form and when issued will be registered initially in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC"), New York, New York. So long as DTC or its nominee is the registered owner of the Series 2005 Bonds, purchases of the Series 2005 Bonds will be made in book-entry form only, through brokers and dealers who are, or who act through, DTC participants; beneficial owners of the Series 2005 Bonds will not receive physical delivery of Bond certificates; payment of the principal of and interest and any premium on the Series 2005 Bonds will be made directly to DTC or its nominee; and disbursement of such payments to DTC participants will be the responsibility of DTC and disbursement of such payments to the beneficial owners will be the responsibility of DTC participants. Purchases of the Series 2005 Bonds may be made in the denomination of \$5,000 or any integral multiple thereof.

The Series 2005 Bonds bear interest payable on January 1 and July 1 of each year, commencing July 1, 2006. The Series 2005 Bonds are subject to redemption prior to the stated maturity thereof as described herein.

The proceeds of the Series 2005 Bonds will be used: (i) to fund the cost of certain additions and improvements to the Wastewater System owned by the City and County of Honolulu (the "City and County"); (ii) to provide for a reserve; and (iii) to pay the costs of issuance of the Series 2005 Bonds.

The Series 2005 Bonds will be issued by the City and County under a bond resolution, as supplemented (the "Bond Resolution"), pursuant to which the City has previously issued bonds and may issue additional bonds on a parity with the Series 2005 Bonds, as described herein (collectively with the Series 2005 Bonds, the "Bonds"). The Series 2005 Bonds are limited special obligations of the City and County payable solely from, and secured solely by, a pledge of proceeds of Bonds held or set aside under the Bond Resolution, the Net Revenues, and certain funds and accounts established by the Bond Resolution, on a parity with all other Bonds issued under the Bond Resolution. Such pledge of the Net Revenues is senior and superior to any pledge of the Net Revenues to secure obligations issued under any other bond resolution. **The Bonds are not a general or moral obligation of the State of Hawaii or any political subdivision thereof, including the City and County, and the faith and credit of the State of Hawaii or any political subdivision thereof, including the City and County, are not pledged to the payment of the principal of, premium, if any, or interest on the Bonds, and no holder of the Bonds shall have the right to compel the exercise of the taxing power of the State of Hawaii or any political subdivision thereof, including the City and County, in connection with any default with respect to the Bonds.**

Payment of the principal of and interest on the Series 2005 Bonds when due will be insured by a bond insurance policy to be issued by Financial Guaranty Insurance Company simultaneously with the delivery of the Series 2005 Bonds.



This cover page contains certain information for quick reference only. It is not a summary of the bond issue. Prospective investors must read the entire Official Statement (including the Appendices) to obtain information essential to the making of an informed investment decision.

The Series 2005 Bonds are offered when, as and if issued and received by the Underwriters, and are subject to the approval of legality by Orrick, Herrington & Sutcliffe LLP, San Francisco, California, Bond Counsel to the City and County. Certain legal matters will be passed upon for the Underwriters by their counsel, McCarriston Miller Mukai MacKinnon LLP, Honolulu, Hawaii. It is expected that the Series 2005 Bonds in definitive form will be available for delivery to DTC, in New York, New York, on or about August 10, 2005.

Citigroup

UBS Financial Services Inc.

July 19, 2005

\$152,815,000
City and County of Honolulu
Wastewater System Revenue Bonds
(First Bond Resolution)
Senior Series 2005A and 2005B

Maturity Schedule

Series A
Serial Bonds, \$51,405,000

Year (July 1)	Principal Amount	Interest Rate	Yield	CUSIP*
2015	\$1,460,000	3.75%	3.76%	438701CS1
2016	3,950,000	5.00	3.87**	438701CT9
2017	4,155,000	5.00	3.92**	438701CU6
2018	4,370,000	5.00	3.97**	438701CV4
2019	4,590,000	5.00	4.02**	438701CW2
2020	990,000	4.00	4.06	438701CX0
2020	3,835,000	5.00	4.06**	438701CY8
2021	5,065,000	5.00	4.10**	438701CZ5
2022	5,325,000	5.00	4.14**	438701DA9
2023	5,600,000	5.00	4.18**	438701DB7
2024	5,885,000	5.00	4.22**	438701DC5
2025	1,700,000	4.20	4.24	438701DD3
2025	4,480,000	5.00	4.24**	438701DE1

Series 2005 A Term Bonds

\$ 510,000	4.25%	Term Bonds	Due July 1, 2030	Yield 4.26%	CUSIP*	438701DF8
\$35,425,000	5.00%	Term Bonds	Due July 1, 2030	Yield 4.26%**	CUSIP*	438701DG6
\$46,135,000	5.00%	Term Bonds	Due July 1, 2035	Yield 4.31%**	CUSIP*	438701DH4

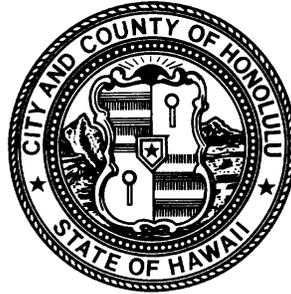
Series B
Serial Bonds, \$19,340,000

Year (July 1)	Principal Amount	Interest Rate	Yield	CUSIP*
2010	\$2,175,000	3.200%	3.230%	438701DJ0
2010	1,000,000	3.500	3.230	438701DK7
2011	3,285,000	3.300	3.360	438701DL5
2012	3,395,000	3.400	3.490	438701DM3
2013	3,515,000	3.500	3.590	438701DN1
2014	2,645,000	3.625	3.680	438701DP6
2014	1,000,000	4.000	3.680	438701DQ4
2015	2,325,000	3.750	3.760	438701DR2

* Copyright 2005, American Bankers Association. CUSIP data provided by Standard & Poor's CUSIP Service Bureau, a division of The McGraw-Hill Companies, Inc. CUSIP Numbers are provided for convenience of reference only. Neither the City and County nor the Underwriters take any responsibility for the accuracy of such numbers.

** Priced to the par call date of July 1, 2015.

City and County of Honolulu
State of Hawaii
(Incorporated 1907)



MAYOR
Mufi Hannemann

CITY COUNCIL

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Chair and Presiding Officer

Ann H. Kobayashi
Vice-Chair

Romy M. Cachola
Floor Leader

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Nestor R. Garcia

Barbara Marshall

Gary H. Okino

Rod Tam

DIRECTOR OF BUDGET AND FISCAL SERVICES
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DEPUTY DIRECTOR OF ENVIRONMENTAL SERVICES
Kenneth A. Shimizu

CORPORATION COUNSEL
Carrie K. S. Okinaga

BOND COUNSEL
Orrick, Herrington & Sutcliffe LLP
San Francisco, California

The information contained in this Official Statement has been obtained from the City and County of Honolulu and other sources deemed reliable. No guaranty is made, however, as to the accuracy or completeness of such information. The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information. This Official Statement, which includes the cover page and appendices, does not constitute an offer to sell the Series 2005 Bonds in any state to any person to whom it is unlawful to make such offer in such state. No dealer, salesman or other person has been authorized to give any information or to make any representations, other than those contained in this Official Statement, in connection with the offering of the Series 2005 Bonds, and if given or made, such information or representations must not be relied upon. The information contained herein is subject to change without notice and neither the delivery of this Official Statement nor any sale hereunder at any time implies that the information contained herein is correct as of any time subsequent to its date.

THE SERIES 2005 BONDS HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, IN RELIANCE UPON AN EXEMPTION CONTAINED IN SUCH ACT. THE SERIES 2005 BONDS HAVE NOT BEEN REGISTERED OR QUALIFIED UNDER THE SECURITIES LAWS OF ANY STATE. IN CONNECTION WITH THIS OFFERING THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE SERIES 2005 BONDS OFFERED HEREBY AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

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OFFICIAL STATEMENT

\$152,815,000

City and County of Honolulu Wastewater System Revenue Bonds (First Bond Resolution)

\$133,475,000 Senior Series 2005A

\$19,340,000 Senior Series 2005B

INTRODUCTORY STATEMENT

This Official Statement, which includes the cover page and the appendices, provides certain information in connection with the issuance by the City and County of Honolulu (the “City and County”) of \$133,475,000 aggregate principal amount of Wastewater System Revenue Bonds (First Bond Resolution), Senior Series 2005A (the “Series 2005A Bonds”), and \$19,340,000 aggregate principal amount of Wastewater System Revenue Bonds (First Bond Resolution), Senior Series 2005B (the “Series 2005B Bonds” and, together with the Series 2005A Bonds, the “Series 2005 Bonds”). The Series 2005 Bonds are to be issued under and secured by the First Wastewater Revenue Bond Resolution adopted by the City Council of the City and County on November 10, 1998 (the “First Bond Resolution”), and the Series 2005 Resolution adopted by the City Council of the City and County on June 6, 2005 (the “Series 2005 Resolution”). The First Bond Resolution, as amended and supplemented, is referred to herein as the “Bond Resolution.” The Series 2005 Bonds are also to be issued under a certain Bond Series Certificate of the City and County dated the date of this Official Statement, relating to the Series 2005 Bonds (the “Series 2005 Certificate”).

The capitalization of any word herein not conventionally capitalized indicates that such word is defined in the Bond Resolution, the Series 2005 Certificate or this Official Statement. A glossary of certain terms used in this Official Statement and the Bond Resolution is set forth in Appendix B under “Certain Definitions.”

The proceeds of the Series 2005 Bonds will be used: (i) to fund the cost of certain additions and improvements to the Wastewater System of the City and County (including reimbursement to the General Fund of the City and County of the financing costs of certain improvements temporarily funded from the General Fund); (ii) to provide for a municipal bond debt service reserve fund policy for funding of the Common Reserve Account in an amount which, together with amounts on deposit therein, is equal to the Common Reserve Account Requirement; and (iii) to pay the costs of issuance of the Series 2005 Bonds.

The Series 2005 Bonds are the third and fourth series of bonds (each a “Series” and collectively, the “Bonds”) issued under and pursuant to the Bond Resolution and will be secured by and entitled to the protection of the Bond Resolution on a parity with all Bonds heretofore issued and to be hereafter issued under and pursuant to the Bond Resolution. The Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, proceeds of Bonds held or set aside under the Bond Resolution, the Net Revenues, and certain funds and accounts established by the Bond Resolution. Such pledge of the Net Revenues is senior and superior to any pledge of the Net Revenues to secure obligations issued under and pursuant to any other bond resolution. See “SECURITY FOR THE BONDS.”

The City and County has \$187,025,000 outstanding principal amount of bonds secured by a pledge of Net Revenues on a parity with the Series 2005 Bonds (collectively with the Series 2005 Bonds, the “Senior Bonds”). In addition, the City and County has \$482,552,890 outstanding principal amount of bonds secured by Net Revenues on a subordinate basis to the Senior Bonds (collectively referred to herein as the “Junior Bonds.”) The Junior Bonds were issued by the City and County under a Second Wastewater Bond Resolution adopted by the City and County on November 10, 1998 (as supplemented, the “Second Resolution”), and are considered to be Subordinate Obligations for purposes of the Bond Resolution. See “DEBT AND FINANCIAL POLICIES AND INDEBTEDNESS – Indebtedness” herein.

The Department of Environmental Services (the “Department”) has the full and complete authority to manage, control and operate the Wastewater System owned or managed and under the jurisdiction of the City and County, including all materials, supplies, equipment and properties used or useful in connection with the Wastewater System. The Department was created July 1, 1998, as part of a City-wide reorganization to streamline operations. Previously, the Department of Wastewater Management, created by a City Charter change effective July 1, 1993, provided operation, maintenance, planning, design and construction of wastewater facilities in the City and County. The City Charter and Chapter 49, Hawaii Revised Statutes (the “Act”) empower the City and County to issue revenue bonds in its name for the purposes of the Wastewater System. See “THE CITY AND COUNTY AND THE DEPARTMENT.”

The Wastewater System services approximately 150,000 separate accounts and a population of approximately 640,000, which is approximately 71% of the total population of the City and County. The service area covers nearly 600 square miles. The customer base includes the residential population, business and industrial, and other users located in the service area. Of the 150,000 accounts, approximately 140,000 are residential, representing 77.8% of the total revenue from sewer service charges; and the remaining approximately 10,000 are non-residential, representing 22.2% of the total revenue from sewer service charges. The average total volume of wastewater processed by the City and County’s Wastewater System was 122 million gallons per day (“MGD”) average day annual flow in 2004. A number of small private wastewater systems also serve some areas in the City and County. The average total volume of wastewater processed by all such private systems is 4.1 MGD. See “THE WASTEWATER SYSTEM.”

The City recently adopted Ordinance No. 05-018 (“the Rate Ordinance”) providing for immediate increases in wastewater rates and for multi-year rate increases for the period effective July 1, 2005, to and including July 1, 2010. See “CERTAIN FINANCIAL OPERATIONS AND OTHER INFORMATION AND STATISTICS — Rates and Charges.”

The additions and improvements to the Wastewater System, the costs of which are to be financed from the proceeds of the Series 2005 Bonds, are part of a five year capital improvement program adopted by the Department and approved by the City Council of the City and County (the “2006-2010 Capital Improvement Program”). The 2006-2010 Capital Improvement Program is projected to cost approximately \$792.4 million (in inflated dollars) and is being undertaken for the purposes, among others, of meeting certain consent decrees entered into by the Department with Federal and State regulatory bodies and reliably serving projected growth in the number of customers served by the Wastewater System. The 2006-2010 Capital Improvement Program is a part of the 1998-2017 twenty year capital improvement program (the “1998-2017 Capital Improvement Program”) the Department has undertaken. The 1998-2017 Capital Improvement Program is projected to cost approximately \$2.3 billion (in inflated dollars) and has been undertaken for the same basic purposes as the 2006-2010 Capital Improvement Program. The cost of the 1998-2017 Capital Improvement Program, including the 2006-2010 Capital Improvement Program, is expected to be financed primarily from (i) the proceeds of the Series 2005 Bonds as well as Bonds and Subordinate Obligations previously issued, (ii) proceeds of additional Bonds and Subordinate Obligations to be hereafter issued, (iii) proceeds of Reimbursable Obligations previously issued and currently available, (iv) the Net Revenues of the Wastewater System, and (v) Wastewater System Facilities Charges. See “CAPITAL IMPROVEMENT PROGRAM” and Appendix A, “Engineer’s Report.”

Carollo Engineers, P.C., Consulting Engineer (the “Consulting Engineer”), has projected revenues, expenses and coverages for the Wastewater System for the Fiscal Years 2006-2015, inclusive. The projections are based on inflated dollars (*i.e.*, adjusted from 2005 dollars). The projections indicate that with respect to the Fiscal Years 2006-2015, inclusive, the City and County can (i) issue the Series 2005 Bonds to finance \$140 million of necessary additions and improvements to the Wastewater System, to fund the Common Reserve Account in an amount sufficient to satisfy its requirement, and to pay the costs of issuing the Series 2005 Bonds; (ii) finance an additional \$1.19 billion of improvements to the Wastewater System from proceeds of additional Bonds and Subordinate Obligations to be hereafter issued, proceeds of Reimbursable Obligations previously issued and currently available, proceeds of wastewater revenue bonds previously issued and currently available, the Net Revenues and Wastewater System Facility Charges over the ten year period; and (iii) fully meet all reserve funding and coverage requirements under the Bond Resolution and the Second Bond Resolution by raising sewer rates and charges by 25% in Fiscal Year 2005-2006 and another 4% to 10% in each of the Fiscal Years thereafter, and by raising Wastewater System Facility Charges by 3% in Fiscal Year 2005-2006 and another 3% in each of the Fiscal

Years thereafter. The average monthly residential wastewater charge is expected to increase from \$41.31 to \$83.91 (in inflated dollars) by 2015. For a discussion of the Rate Ordinance, see “CERTAIN FINANCIAL, OPERATIONS AND OTHER INFORMATION AND STATISTICS — Rates and Charges.” The Wastewater System Facility Charge is expected to increase from \$4,780 to \$6,236 (in inflated dollars) by 2015. The Consulting Engineer has concluded that current customer rates and charges for the City and County compare favorably to other similar wastewater agencies. See Appendix A, “Engineer’s Report.” The Consulting Engineer recently completed a Wastewater Asset Evaluation and Condition Assessment as part of the City and County’s Wastewater Asset Management Program. The Consulting Engineer has also performed an Operations and Maintenance Evaluation of the Sand Island Wastewater Treatment Plant (WWTP) to assess overall effectiveness and efficiency. The Consulting Engineer has also completed several projects for the City and County, including engineering reports for the 1998 Bonds and Series 2001 Bonds and various projects in conjunction with R. M. Towill Corporation.

Pursuant to the Act and the City Charter, the City Council has the power to impose, prescribe and collect rates, rentals, fees or charges for the use and services of, and the facilities furnished by, the Wastewater System so that the Wastewater System will be and remain self-sustaining. The rates, rentals, fees or charges imposed and prescribed are required to produce revenues which will be at least sufficient to pay debt service on all revenue bonds issued for the purposes of the Wastewater System, including the Bonds and the Subordinate Obligations, to provide reserves therefor, to pay the costs of operation, maintenance and repair of the Wastewater System, and to carry out the covenants of all resolutions authorizing the issuance of revenue bonds for the purposes of the Wastewater System, including the Bond Resolution and the Second Resolution. The rates and charges fixed and imposed by the City Council are not subject to approval by any federal or state regulatory bodies. The City Council has not as of the date of this Official Statement adopted any of the rate increases beyond July 1, 2010, discussed in the Engineer’s Report. See discussion under “HISTORICAL AND PROJECTED REVENUES, EXPENSES AND COVERAGES – General.”

APPLICATION OF PROCEEDS

The proceeds of sale of the Series 2005 Bonds, in an amount equal to the principal thereof less Underwriters’ discount plus net original issue premium will be applied to make the following deposits:

Improvement Account*	\$159,082,480.50
Common Reserve Account **	140,789.43
Wastewater General Account for Costs of Issuance***	<u>515,393.43</u>
Total Uses	<u>\$159,738,663.36</u>

* Includes reimbursement of General Fund.
 ** Cost of reserve fund policy premium.
 *** Includes bond insurance premium.

THE SERIES 2005 BONDS

General

The Series 2005 Bonds will be dated and bear interest the date of issuance and delivery thereof, with interest payable on January 1 and July 1 of each year, commencing July 1, 2006, at the rates per annum and will mature in the principal amounts on July 1 in each year, as set forth on the inside cover page of this Official Statement.

Optional Redemption

The Series 2005 Bonds maturing after July 1, 2015, are subject to redemption at the option of the City and County, on or after July 1, 2015, in whole or in part at any time, from any maturities selected by the City and County at a redemption price equal to 100% of the principal amount of the Series 2005 Bonds or portions thereof to be redeemed, plus accrued interest to the date of redemption.

Mandatory Redemption

The Series 2005A Bonds maturing on July 1, 2030 (with an interest rate of 4.25%), July 1, 2030 (with an interest rate of 5.00%) and July 1, 2035, are also subject to redemption, in part, on each of the dates and in the respective principal amounts set forth below, at a Redemption Price of 100% of the principal amount thereof, plus accrued interest to the date of redemption, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem the principal amount of Series 2005 Bonds specified for July of each of the years shown below:

Series 2005A Bonds
Maturing July 1, 2030
(with an interest rate of 4.25%)

<u>Year</u> <u>(July 1)</u>	<u>Principal</u> <u>Amount</u>
2026	\$ 90,000
2027	95,000
2028	100,000
2029	110,000
2030†	115,000

† Final maturity.

Series 2005A Bonds
Maturing July 1, 2030
(with an interest rate of 5.00%)

<u>Year</u> <u>(July 1)</u>	<u>Principal</u> <u>Amount</u>
2026	\$6,400,000
2027	6,725,000
2028	7,070,000
2029	7,425,000
2030†	7,805,000

† Final maturity.

Series 2005A Bonds
Maturing July 1, 2035

<u>Year</u> <u>(July 1)</u>	<u>Principal</u> <u>Amount</u>
2031	\$ 8,330,000
2032	8,755,000
2033	9,205,000
2034	9,675,000
2035†	10,170,000

† Final maturity.

Notice of Redemption

The City and County will mail notice of redemption not less than 30 days prior to the redemption date by registered, certified or regular first-class mail, to the registered owners of any of the Series 2005 Bonds or portions of the Series 2005 Bonds which are to be redeemed, at their last addresses appearing upon the Bond Registry. The City and County may also but is not required to cause such notice to be published at least once in such newspapers as provided in the Bond Resolution not less than thirty (30) days prior to the date fixed for redemption date. Failure of the City and County to publish any such notice shall not affect the validity of the proceedings for the redemption of such Series 2005 Bonds. See “THE SERIES 2005 BONDS - Book-Entry System.”

Effect of Redemption

If, on the redemption date, moneys for the redemption of all the Series 2005 Bonds or portions thereof of any maturity to be redeemed, together with interest to the redemption date, shall be held by the City and County or Paying Agent so as to be available therefor on said date and if notice of redemption shall have been given as provided in the Bond Resolution, then, from and after the redemption date, interest on the Series 2005 Bonds or portions thereof of such maturity so called for redemption shall cease and become payable. If such moneys shall not be so available on the redemption date, such Series 2005 Bonds or portions thereof shall continue to bear interest until paid at the same rate as they would have borne had they not been called for redemption.

Selection for Redemption

So long as the Book-Entry System for the Series 2005 Bonds is in effect, if less than all of the Series 2005 Bonds of any one maturity are to be redeemed, the particular Series 2005 Bonds or portions of Series 2005 Bonds of such maturity to be redeemed will be selected by DTC and its Participants in such manner as DTC and its Participants may determine. If the Book-Entry System for the Series 2005 Bonds is no longer in effect, selection for redemption of less than all Series 2005 Bonds of any one maturity will be made by the Paying Agent by lot as provided in the Bond Resolution.

Book-Entry System

Information on DTC and Book-Entry System. Information concerning DTC and the Book-Entry System contained in this Official Statement has been obtained from DTC and other sources that the City and County and the Underwriters believe to be reliable, and is not guaranteed as to accuracy or completeness by, and is not to be construed as a representation by, the Underwriters or the City and County.

The Depository Trust Company (“DTC”), New York, New York, will act as securities depository for the Series 2005 Bonds. The Series 2005 Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative

of DTC. One fully-registered Bond certificate will be issued for the Series 2005 Bonds of each maturity, in the aggregate principal amount of such issue, and will be deposited with DTC.

DTC and its Participants. DTC, the world's largest depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 2 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments from over 85 countries that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC, in turn, is owned by a number of Direct Participants of DTC and Members of the National Securities Clearing Corporation, Government Securities Clearing Corporation, MBS Clearing Corporation, and Emerging Markets Clearing Corporation, (NSCC, GSCC, MBSCC, and EMCC, also subsidiaries of DTCC), as well as by the New York Stock Exchange, Inc., the American Stock Exchange LLC, and the National Association of Securities Dealers, Inc. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has Standard & Poor's highest rating: AAA. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchase of Ownership Interests. Purchases of Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2005 Bonds on DTC's records. The ownership interest of each actual purchaser of each Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2005 Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Series 2005 Bonds, except in the event that use of the book-entry system for the Series 2005 Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2005 Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Notices and Other Communications. Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all of the Series 2005 Bonds within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Bonds unless authorized by a Direct Participant in accordance with DTC's Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the City and County as soon as possible after the record date. The Omnibus Proxy

assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption Proceeds, Distributions, and Dividend Payments. Redemption proceeds, distributions, and dividend payments on the Series 2005 Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the City and County or Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, Agent, or the City and County, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the City and County or Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

Discontinuance of Book-Entry System. DTC may discontinue providing its services as depository with respect to the Series 2005 Bonds at any time by giving reasonable notice to the City and County or Agent. Under such circumstances, in the event that a successor depository is not obtained, Bond certificates are required to be printed and delivered.

The City and County may decide to discontinue use of the system of book-entry transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered.

Use of Certain Terms in Other Sections of the Official Statement. In reviewing this Official Statement it should be understood that while the Series 2005 Bonds are in the Book-Entry System, references in other sections of this Official Statement to owners should be read to include the person for which the Participant acquires an interest in the Series 2005 Bonds, but (i) all rights of ownership must be exercised through DTC and the Book-Entry System and (ii) notices that are to be given to owners by the City and County will be given only to DTC. DTC will forward (or cause to be forwarded) the notices to the Participants by its usual procedures so that such Participants may forward (or cause to be forwarded) such notices to the Beneficial Owners.

City and County Disclaimer of Responsibility. The City and County will have no responsibility or obligation to Direct Participants, to Indirect Participants or to Beneficial Owners with respect to (i) the accuracy of any records maintained by DTC, any Direct Participants or Indirect Participants, or (ii) the payment by DTC, any Direct Participants or any Indirect Participants of any amount in respect of principal or redemption price of or interest on the Series 2005 Bonds, or (iii) any notice which is permitted or required to be given to owners (except such notice as is required to be given by the City and County to DTC), or (iv) the selection by DTC of any Participant to receive payment in the event of a partial redemption of the Series 2005 Bonds, or (v) any consent given or other action taken by DTC as Owner of the Series 2005 Bonds, or (vi) any other event or purpose.

So long as Cede & Co. is the registered owner of the Series 2005 Bonds, as nominee for DTC, references herein to the Bondholders or registered owners of the Series 2005 Bonds (other than under the captions "TAX MATTERS" and "CONTINUING DISCLOSURE" herein) shall mean Cede & Co., as aforesaid, and shall not mean the Beneficial Owners of the Series 2005 Bonds.

SECURITY FOR THE BONDS

General

The Bonds issued under and pursuant to the Bond Resolution, including the Series 2005 Bonds, are limited special obligations of the City and County. Pursuant to the Bond Resolution, there has been pledged, as security for the payment of the debt service on the Bonds, proceeds of the Bonds held or set aside under the Bond Resolution, the Net Revenues, and all Funds and Accounts established by the Bond Resolution other than the Rebate Account, the Subordinate Obligation Account, and the Reimbursable Obligation Account and in certain instances pursuant to the Bond Resolution, the Common Reserve Account or Separate Series Reserve Accounts. The Bonds are equally

and ratably payable and secured under the Bond Resolution except that the City and County has reserved the right under the Bond Resolution to afford a particular Series of Bonds or particular Bonds additional or different security through a Support Facility, escrow funds, or the establishment of separate funds and accounts with respect to a particular Series of Bonds funded from sources other than the Net Revenues.

Under the Bond Resolution, Net Revenues means, with respect to any period, the Revenues during such period less amounts required to pay Operation and Maintenance Expenses. Revenues means the moneys, including any moneys collected from the City and County or any department thereof other than the Department, derived by the Department from the rates, rentals, fees and charges prescribed for the use and services of, and the facilities and commodities furnished by, the Wastewater System. Revenues include (i) all income, receipts, profits, and other moneys derived from the furnishing or supplying of the services, facilities and commodities through the Wastewater System; (ii) all income from investments of moneys held under the Bond Resolution except the Rebate Account, the Subordinate Obligation Account or the Reimbursable Obligation Account; (iii) all payments made by Counterparties pursuant to Interest Rate Exchange Agreements; and (iv) moneys and Investment Securities transferred from the Rate Stabilization Account to the Sewer Fund within ninety (90) days following the end of a Fiscal Year. Certain items do not constitute Revenues under the Bond Resolution, including certain deposits subject to refund, certain contributions in-aid-of construction and assessment, impact and other similar fees imposed and collected by the Department, income, fees, charges, receipts, profits or other moneys derived by the Department from the ownership or operation of any separate utility system, and certain gifts, grants and donations, moneys and Investment Securities transferred from the Sewer Fund to the Rate Stabilization Account within ninety (90) days following the end of a Fiscal Year, or Wastewater System Facility Charges.

The pledge of the Net Revenues for the security and payment of the Bonds under the Bond Resolution is superior to the pledge and security for Subordinate Obligations and Reimbursable Obligations authorized to be issued pursuant to the Bond Resolution. "Subordinate Obligations" are any obligations of the City and County payable from the Net Revenues, other than the Bonds and the Reimbursable Obligations, issued in compliance with the provisions of the Bond Resolution. "Reimbursable Obligations" are general obligation bonds payable from moneys in the City and County's general fund, subject to reimbursement from the Net Revenues. As of July 1, 2005, \$132,569,964 principal amount of Subordinate Obligations (other than Junior Bonds) and Reimbursable Obligations were outstanding.

The Series 2005 Bonds will constitute Bonds under the Bond Resolution. The Series 2005 Bonds are the third Series of Bonds to be issued under the Bond Resolution. The City and County expects to issue additional Bonds under the Bond Resolution on a parity with the Series 2005 Bonds.

The Bonds are not a general or moral obligation of the State of Hawaii or any political subdivision thereof, including the City and County, and the faith and credit of the State of Hawaii or any political subdivision thereof, including the City and County, are not pledged to the payment of the principal or redemption price of or interest on the Bonds, and no holder of the Bonds shall have the right to compel the exercise of the taxing power of the State of Hawaii or any political subdivision thereof, including the City and County, in connection with any default with respect to the Bonds.

Funds and Accounts

The various funds and accounts established under or pledged by the Bond Resolution, the flow of Revenues through such funds and accounts, the rights and remedies of Bondholders under the Bond Resolution and other related matters are summarized in Appendix B, "Summary of Certain Provisions of the Bond Resolution."

The City and County has established the Sewer Fund by ordinance. Revenues are deposited in the Sewer Fund. The Bond Resolution establishes in the Sewer Fund a Debt Service Account, a Rate Stabilization Account, a Renewal and Replacement Account and a Wastewater General Account, all of which are pledged as security for the payment of debt service on all Bonds subject to the terms and provisions of and the exceptions provided in the Bond Resolution. The Bond Resolution also establishes a Common Reserve Account in the Sewer Fund and permits the establishment in the Sewer Fund of one or more Separate Series Reserve Accounts. The Common Reserve Account is pledged as additional security for the payment of debt service on the Bonds of such Series designated by the City and County to be entitled to the benefit of the Common Reserve Account. Each Separate Series Reserve Account is

pledged as additional security for the payment of debt service on the Bonds of such individual Series designated by the City and County to be entitled to the benefit of such Separate Series Reserve Account.

The debt service on and redemption price of the Bonds are payable from the Debt Service Account in the Sewer Fund. In the event of a deficiency in the Debt Service Account, debt service on and redemption price of particular Bonds are payable from the Common Reserve Account or the Separate Series Reserve Accounts, as applicable, but only if such Bonds are entitled to the benefit of such reserve accounts.

Moneys deposited and retained in the Sewer Fund may be maintained in an amount which is reasonable and necessary for working capital and reserves. The Rate Stabilization Account is to be used to stabilize the rates and charges of the Wastewater System. The Rate Stabilization Account is to be maintained in an amount as provided in the Annual Budget and is to be funded (i) from the Revenues but only after paying the Operation and Maintenance Expenses and after transferring required amounts to other funds and accounts as provided in the Bond Resolution, and (ii) from transfers from the Wastewater General Account. The Renewal and Replacement Account is to be used to pay the costs of improvements to or reconstruction of the Wastewater System, repairs, major or extraordinary repairs and renewals or replacements of the Wastewater System and under certain conditions, as set forth in the Bond Resolution, to meet deficiencies in the Debt Service Account, the Common Reserve Account, Separate Series Reserve Accounts, if any, the Subordinate Obligation Account and the Reimbursable Obligation Account, and will be maintained in an amount provided for in the Annual Budget. The Wastewater General Account may be used for any lawful purpose of the City and County, including funding of the Rate Stabilization Account, and under certain conditions, may be used to meet deficiencies in the Sewer Fund, the Common Reserve Account, Separate Series Reserve Accounts, if any, the Renewal and Replacement Account, the Rebate Account, the Subordinate Obligation Account and the Reimbursable Obligation Account.

The Bond Resolution also establishes in the Sewer Fund a Rebate Account, a Subordinate Obligation Account and a Reimbursable Obligation Account. Such accounts are not pledged as security for the Series 2005 Bonds, or any other Bonds. The funds in the Subordinate Obligation Account are to be used to pay debt service on and redemption price of Subordinate Obligations, provide necessary debt service reserves and other reserves and pay other costs related to Subordinate Obligations. The funds in the Reimbursable Obligation Account are to be used to pay debt service on and redemption price of Reimbursable Obligations. The funds in the Rebate Account are to be used to pay required rebates to the United States Treasury Department incurred in respect of the Bonds.

The Bond Resolution also establishes in the Sewer Fund the Wastewater System Facility Charge Account. Wastewater System Facility Charges collected by the Department are deposited in the Wastewater System Facility Charge Account. The Wastewater System Facility Charge Account is pledged under the Bond Resolution as security for the payment of debt service on and redemption price of the Bonds. However, if any amounts are used to pay debt service on or redemption price of the Bonds, the Wastewater System Facility Charge Account must be reimbursed from the Net Revenues with the priority set forth in the Bond Resolution. The Wastewater System Facility Charges are not considered to be Revenues under the Bond Resolution.

The City and County has also established by ordinance the Improvement Fund. The Bond Resolution establishes in the Improvement Fund an Improvement Account and permits the establishment within the Improvement Account of one or more Series Improvements Subaccounts and one or more Series Improvement Interest Subaccounts. Proceeds of Bonds issued under the Bond Resolution are to be deposited in the Improvement Account or a Series Improvement Subaccount pending application to pay the Costs of Improvements. Proceeds of Bonds issued under the Bond Resolution which are to be used to pay capitalized interest on the Bonds of a Series during the period of construction of an Improvement and for six months thereafter must be deposited in a Series Improvement Interest Subaccount. The Improvement Account, each Series Improvement Subaccount and each Series Improvement Interest Subaccount (but not the Improvement Fund) are pledged under the Bond Resolution as security for the payment of debt service on and redemption price of the Bonds.

Common Reserve Account and Separate Series Reserve Accounts

Common Reserve Account. The Bond Resolution establishes a Common Reserve Account. Under the Bond Resolution, the City and County may designate one or more Series of Bonds to be entitled to the benefit of the Common Reserve Account. The Series 2005 Bonds are entitled to the benefit of the Common Reserve Account.

The moneys held in the Common Reserve Account are to be used to pay debt service on the Bonds entitled to the benefit of the Common Reserve Account in the event of a deficiency in the Debt Service Account to pay such debt service. The Common Reserve Account is to be maintained in an amount not less than the Common Reserve Account Requirement. The Common Reserve Account Requirement is an amount that is equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Bonds entitled to the benefit of the Common Reserve Account; provided, however, that if upon the issuance of a Series of Bonds entitled to the benefit of the Common Reserve Account, such amount would require moneys credited to the Common Reserve Account from the proceeds of such Bonds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Account Requirement will then be the Common Reserve Account Requirement immediately preceding the issuance of such Bonds and the maximum amount permitted under the Code to be deposited from the proceeds of such Bonds, as certified by an Authorized Officer. The Bond Resolution provides that the Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Account by using the Assumed Long-Term Fixed Rate.

In lieu of cash or securities, the Bond Resolution permits the Department to satisfy the Common Reserve Account Requirement in part or in whole by causing to be deposited into the Common Reserve Account a Support Facility (which may be an irrevocable letter of credit, surety bond, loan agreement, standby bond purchase agreement, or other agreement facility or insurance or guaranty agreement issued by a bank or banks, or other financial institution or institutions, or any combination of the foregoing) in an amount equal to the difference between the Common Reserve Account Requirement and the sums then on deposit in the Common Reserve Account, if any. The Support Facility must be payable (upon the giving of notice as required thereunder) on or before any interest payment date on which moneys will be required to be withdrawn from the Common Reserve Account and applied to the payment of principal or redemption price of or interest on any Bonds and such withdrawal cannot be met by amounts on deposit in the Common Reserve Account or provided from any other available Fund under the Bond Resolution. Any Support Facility deposited in the Common Reserve Account or the long-term debt of the issuer of any Support Facility deposited in the Common Reserve Account must, in each case, be rated in the highest rating category by each Rating Agency and, if rated by A.M. Best & Company, must also be rated in the highest rating category by A.M. Best & Company. In the event any Support Facility deposited in the Common Reserve Account or the long-term debt of the issuer of any Support Facility deposited in the Common Reserve Account falls below the second highest rating category of each Rating Agency, and A.M. Best & Company, if rated by A.M. Best & Company, the City and County must, within 120 days, obtain a new Support Facility which, or which the long-term debt of the issuer of such new Support Facility, is rated in the highest rating category of such rating agencies; provided, however, that if the new Support Facility is not obtained within 120 days, the City and County must deposit in the Common Reserve Account Net Revenues in the amount provided in the Bond Resolution. If a disbursement is made pursuant to a Support Facility deposited in the Common Reserve Account, the City and County must: first, reinstate the full amount of such Support Facility; and second, if necessary, deposit Net Revenues in the Common Reserve Account in the amount of the disbursement made under such Support Facility, in either case such that the amount in the Common Reserve Account will equal the Common Reserve Account Requirement within a period of time not longer than would be required to restore the Common Reserve Account by application of moneys in the Sewer Fund as required by the Bond Resolution. The City and County may at any time deposit cash or Investment Securities as replacement for one or more Support Facilities.

The City and County has arranged for the delivery, upon issuance of the Series 2005 Bonds, of a Support Facility in the form of a municipal bond debt service reserve fund policy in an amount equal to the amount of the portion of the Common Reserve Subaccount Requirement applicable to the Series 2005 Bonds.

Separate Series Reserve Accounts. The Bond Resolution permits the establishment of a Separate Series Reserve Account to provide additional security for the Bonds of a Series which is not entitled to the benefit of the Common Reserve Account. In the event of a deficiency in the Debt Service Account to pay debt service on the Bonds of a Series entitled to the benefit of a Separate Series Reserve Account, the amounts held in such Separate Series Reserve Account are to be used exclusively to pay such debt service. The amount to be maintained in any such Separate Series Reserve Account for a Series of Bonds is to be determined at the time such Bonds are authorized or sold. The credit quality of a Support Facility to be deposited in any Separate Series Reserve Account for a Series of Bonds is also to be determined at the time such Bonds are authorized or sold. No Separate Series Reserve Account has been established for the Series 2005 Bonds.

Transfers to Reserve Accounts. The Bond Resolution requires that in each month, after paying and setting aside an amount sufficient to pay the Operation and Maintenance Expenses for such month, and after transferring to the Debt Service Account an amount sufficient to pay debt service on the Bonds to accrue in such month, moneys in the Sewer Fund are to be transferred pro rata to the Common Reserve Account and each Separate Series Reserve Account in such amounts as are required so that the balances in the Common Reserve Account and each Separate Series Reserve Account are equal to their respective requirements, or at the election of the Department; so that at least one-sixth of any deficiency in the Common Reserve Account or each Separate Series Reserve Account is eliminated.

Rate Covenant

The City and County is required by the Bond Resolution, among other things, to fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues shall not be less than the Net Revenue Requirement for such Fiscal Year. The Net Revenue Requirement means with respect to any Fiscal Year or any period, an amount equal to the greater of: (i) the sum of (a) the Aggregate Debt Service in such Fiscal Year or such period and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.20 times the Aggregate Debt Service in such Fiscal Year plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year. Net Revenues means, with respect to any period, the Revenues during such period less amounts required to pay Operation and Maintenance Expenses. Aggregate Debt Service means, for any period and as of any date of computation, the sum of the amounts of Debt Service for such period with respect to all Series of Bonds. Support Facility Reimbursement Obligations are obligations of the City and County to directly reimburse the Support Facility Provider of a Support Facility for amounts paid thereunder or a Counterparty under an Interest Rate Exchange Agreement for amounts paid, whether or not such obligation to reimburse is evidenced by a promissory note or similar instrument.

Failure by the City and County to comply with the foregoing rate covenant in any Fiscal Year will not constitute an Event of Default under the Bond Resolution so long as the provisions of the Bond Resolution described below are complied with. Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services is required by the Bond Resolution to complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the foregoing rate covenant and to make a written certification with respect to compliance or noncompliance. Such review is to take into consideration the completion of any uncompleted Improvements and the issuance of future Series of Bonds if necessary to finance the completion of such Improvements. Such written certification is to set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, shall be filed with the City Clerk on or before July 1 in each year. If it is determined in such written certification that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with such rate covenant, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such certification. The City Council, as promptly as practicable but no later than 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer's recommendation, is required to adopt and place in effect a schedule of fees, rates and charges as so determined or recommended. See "CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS – Rates and Charges" for current sewer charges, "PROJECTED REVENUES, EXPENSES AND COVERAGES" and Appendix A, "Engineer's Report" for a discussion of the Department's projected rates, revenues and expenses, and "THE CITY AND COUNTY AND THE DEPARTMENT - Purpose and Powers" for a discussion of the rate making powers of the City Council.

Additional Bonds and Refunding Bonds

The Bond Resolution permits the issuance of additional Series of Bonds (exclusive of refunding Bonds) on a parity with the Bonds then Outstanding ("Additional Bonds") for any lawful use or purpose relating to the

Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements but only upon compliance as to each such Series with the conditions set forth in the Bond Resolution. The Series 2005 Bonds are being issued as Additional Bonds under the Bond Resolution and their issuance is subject to compliance with such conditions, which include delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Account after issuance of the Bonds then to be issued and that the amounts deposited will not be less than the Common Reserve Account Requirement.

2. A written certificate of the City and County stating the amount required to be in the Separate Series Reserve Account established for the Bonds of such Series after issuance of the Bonds then to be issued and that the amounts deposited will not be less than the Separate Series Reserve Account Requirement for the Bonds of such Series.

3. Either:

(I) a written certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department's books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive 12-month period out of 24 months immediately preceding the month in which such Bonds are issued were not less than the greater of: (x) the sum of (1) the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and the 12-month period selected and (2) the Required Deposits for such Fiscal Year or the 12-month period selected; and (y) 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and the 12-month period selected, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of the written certificate of the City and County; or

(II) a written certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Bonds are expected to commence operations, or, if the proceeds of such Series of Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Bonds are issued, are estimated to be not less than the greater of: (x) the sum of (1) the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, and (2) the Required Deposits for any such Fiscal Year; and (y) 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of such written certificate of the City and County or certificate of the Consulting Engineer.

In determining Net Revenues for purposes of the certificates described above, the City and County or the Consulting Engineer, as the case may be, is permitted, and in certain instances is required, to make certain adjustments as provided in the Bond Resolution. In addition, the Bond Resolution requires that certain other adjustments to Net Revenues derived from Debt Service on Variable Rate Bonds and debt service on Bond Anticipation Notes and short-term Subordinate Obligations and Reimbursable Obligations be made for purposes of the written certificates described above. See Appendix B, "Summary of Certain Provisions of the Bond Resolution."

Bonds may be issued as variable rate bonds, fixed rate bonds, bonds providing for the right of the owner thereof to present the Bond for redemption or purchase prior to maturity, zero interest rate or deep discount bonds, bonds providing for the compounding of interest, or any combination thereof. Bonds may be issued or outstanding from time to time with or without credit enhancement provisions. See Appendix B, "Summary of Certain Provisions of the Bond Resolution."

The Bond Resolution also permits the issuance of Bonds (“Refunding Bonds”) on a parity with the Bonds then Outstanding to refund all or any part of: (i) a Series of Outstanding Bonds; (ii) Subordinate Obligations; or (iii) Reimbursable Obligations. Refunding Bonds may only be issued by the City and County upon satisfaction of certain conditions set forth in the Bond Resolution.

A more detailed description of the requirements relating to the issuance of Additional Bonds or Refunding Bonds is set forth in Appendix B under “Additional Bonds and Refunding Bonds.”

The Bond Resolution also permits the issuance of notes in anticipation of a Series of Bonds if the City and County has theretofore authorized the issuance of such Bonds. The interest on such notes (and any renewal thereof) shall be payable from the proceeds of such notes or other notes or from the proceeds of the sale of the Bonds in anticipation of which such notes are issued. A more detailed description of the provisions for security for payment of such notes and other requirements relating to the issuance of notes is set forth in Appendix B under “Bond Anticipation Notes.”

BOND INSURANCE

Financial Guaranty Insurance Company (the “Bond Insurer”) has supplied the following information for inclusion in this Official Statement. No representation is made by the City and County or the Underwriters as to the accuracy or completeness of this information.

Payments Under the Policy

Concurrently with the issuance of the Series 2005 Bonds, Financial Guaranty Insurance Company (the “Bond Insurer”) will issue its Municipal Bond New Issue Insurance Policy for the Series 2005 Bonds (the “Policy”). The Policy unconditionally guarantees the payment of that portion of the principal or accreted value (if applicable) of and interest on the Series 2005 Bonds which has become due for payment, but shall be unpaid by reason of nonpayment by the City and County. The Bond Insurer will make such payments to U.S. Bank Trust National Association, or its successor as its agent (the “Fiscal Agent”), on the later of the date on which such principal, accreted value or interest (as applicable) is due or on the business day next following the day on which the Bond Insurer shall have received notice (in accordance with the terms of the Policy) from an owner of Series 2005 Bonds or the trustee or paying agent (if any) of the nonpayment of such amount by the City and County. The Fiscal Agent will disburse such amount due on any Series 2005 Bond to its owner upon receipt by the Fiscal Agent of evidence satisfactory to the Fiscal Agent of the owner’s right to receive payment of the principal, accreted value or interest (as applicable) due for payment and evidence, including any appropriate instruments of assignment, that all of such owner’s rights to payment of such principal, accreted value or interest (as applicable) shall be vested in the Bond Insurer. The term “nonpayment” in respect of a Series 2005 Bond includes any payment of principal, accreted value or interest (as applicable) made to an owner of a Series 2005 Bond which has been recovered from such owner pursuant to the United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final, nonappealable order of a court having competent jurisdiction.

Once issued, the Policy is non-cancellable by the Bond Insurer. The Policy covers failure to pay principal (or accreted value, if applicable) of the Series 2005 Bonds on their stated maturity dates and their mandatory sinking fund redemption dates, and not on any other date on which the Series 2005 Bonds may have been otherwise called for redemption, accelerated or advanced in maturity. The Policy also covers the failure to pay interest on the stated date for its payment. In the event that payment of the Series 2005 Bonds is accelerated, the Bond Insurer will only be obligated to pay principal (or accreted value, if applicable) and interest in the originally scheduled amounts on the originally scheduled payment dates. Upon such payment, the Bond Insurer will become the owner of the Series 2005 Bond, appurtenant coupon or right to payment of principal or interest on such Series 2005 Bond and will be fully subrogated to all of the Bondholder’s rights thereunder.

The Policy does not insure any risk other than Nonpayment by the City and County. Specifically, the Policy does not cover: (i) payment on acceleration, as a result of a call for redemption (other than mandatory sinking fund redemption) or as a result of any other advancement of maturity; (ii) payment of any redemption, prepayment or acceleration premium; or (iii) nonpayment of principal (or accreted value, if applicable) or interest caused by the insolvency or negligence or any other act or omission of the trustee or paying agent, if any.

As a condition of its commitment to insure Series 2005 Bonds, the Bond Insurer may be granted certain rights under the Series 2005 Bond documentation. The specific rights, if any, granted to the Bond Insurer in connection with its insurance of the Series 2005 Bonds may be set forth in the description of the principal legal documents appearing elsewhere in this Official Statement, and reference should be made thereto.

The Policy is not covered by the Property/Casualty Insurance Security Fund specified in Article 76 of the New York Insurance Law.

The Reserve Policy

Concurrently with the issuance of the Series 2005 Bonds, the Bond Insurer will issue its Municipal Bond Debt Service Reserve Fund Policy (the “Reserve Policy”). The Reserve Policy unconditionally guarantees the payment of that portion of the principal or accreted value (if applicable) of and interest on the Series 2005 Bonds which has become due for payment, but shall be unpaid by reason of nonpayment by the City and County, provided that the aggregate amount paid under the Reserve Policy may not exceed the maximum amount set forth in the Reserve Policy, \$10,428,846.87. The Bond Insurer will make such payments to the paying agent (the “Paying Agent”) for the Series 2005 Bonds on the later of the date on which such principal or accreted value (if applicable) and interest is due or on the business day next following the day on which the Bond Insurer shall have received telephonic or telegraphic notice subsequently confirmed in writing or written notice by registered or certified mail from the Paying Agent of the nonpayment of such amount by the City and County. The term “nonpayment” in respect of a Series 2005 Bond includes any payment of principal, accreted value or interest (as applicable) made to an owner of a Series 2005 Bond which has been recovered from such owner pursuant to the United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final nonappealable order of a court having competent jurisdiction.

The Reserve Policy is non-cancellable and the premium will be fully paid at the time of delivery of the Series 2005 Bonds. The Reserve Policy covers failure to pay principal or accreted value (if applicable) of the Series 2005 Bonds on their respective stated maturity dates, or dates on which the same shall have been called for mandatory sinking fund redemption, and not on any other date on which the Series 2005 Bonds may have been accelerated, and covers the failure to pay an installment of interest on the stated date for its payment. The Reserve Policy shall terminate on the scheduled final maturity date of the bonds being issued to which the Reserve Policy relates.

Generally, in connection with its issuance of a Reserve Policy, the Bond Insurer requires, among other things, (i) that, so long as it has not failed to comply with its payment obligations under the Reserve Policy, it be granted the power to exercise any remedies available at law or under the authorizing document other than (A) acceleration of the Series 2005 Bonds or (B) remedies which would adversely affect holders in the event that the City and County fails to reimburse the Bond Insurer for any draws on the Reserve Policy; and (ii) that any amendment or supplement to or other modification of the principal legal documents be subject to the Bond Insurer’s consent. Reference should be made to the description of the legal documents appearing elsewhere in this Official Statement for a discussion of the circumstances, if any, under which the City and County is required to provide additional or substitute credit enhancement, and related matters.

The Reserve Policy is not covered by the Property/Casualty Insurance Security Fund specified in Article 76 of the New York Insurance Law.

Financial Guaranty Insurance Company

The Bond Insurer, a New York stock insurance corporation, is a direct, wholly-owned subsidiary of FGIC Corporation, a Delaware corporation, and provides financial guaranty insurance for public finance and structured finance obligations. The Bond Insurer is licensed to engage in financial guaranty insurance in all 50 states, the District of Columbia and the Commonwealth of Puerto Rico and, through a branch, in the United Kingdom.

On December 18, 2003, an investor group consisting of The PMI Group, Inc. (“PMI”), affiliates of The Blackstone Group L.P. (“Blackstone”), affiliates of The Cypress Group L.L.C. (“Cypress”) and affiliates of CIVC

Partners L.P. (“CIVC”) acquired FGIC Corporation (the “FGIC Acquisition”) from a subsidiary of General Electric Capital Corporation (“GE Capital”). PMI, Blackstone, Cypress and CIVC acquired approximately 42%, 23%, 23% and 7%, respectively, of FGIC Corporation’s common stock. FGIC Corporation paid GE Capital approximately \$284.3 million in pre-closing dividends from the proceeds of dividends it, in turn, had received from the Bond Insurer, and GE Capital retained approximately \$234.6 million in liquidation preference of FGIC Corporation’s convertible participating preferred stock and approximately 5% of FGIC Corporation’s common stock. Neither FGIC Corporation nor any of its shareholders is obligated to pay any debts of the Bond Insurer or any claims under any insurance policy, including the Policy, issued by the Bond Insurer.

The Bond Insurer is subject to the insurance laws and regulations of the State of New York, where it is domiciled, including Article 69 of the New York Insurance Law (“Article 69”), a comprehensive financial guaranty insurance statute. The Bond Insurer is also subject to the insurance laws and regulations of all other jurisdictions in which it is licensed to transact insurance business. The insurance laws and regulations, as well as the level of supervisory authority that may be exercised by the various insurance regulators, vary by jurisdiction, but generally require insurance companies to maintain minimum standards of business conduct and solvency, to meet certain financial tests, to comply with requirements concerning permitted investments and the use of policy forms and premium rates and to file quarterly and annual financial statements on the basis of statutory accounting principles (“SAP”) and other reports. In addition, Article 69, among other things, limits the business of each financial guaranty insurer, including the Bond Insurer, to financial guaranty insurance and certain related lines.

For the three months ended March 31, 2005, and the years ended December 31, 2004, and December 31, 2003, the Bond Insurer had written directly or assumed through reinsurance, guaranties of approximately \$14.8 billion, \$59.5 billion and \$42.4 billion par value of securities, respectively (of which approximately 71%, 56% and 79%, respectively, constituted guaranties of municipal bonds), for which it had collected gross premiums of approximately \$84.4 million, \$323.6 million and \$260.3 million, respectively. For the three months ended March 31, 2005, the Bond Insurer had reinsured, through facultative and excess of loss arrangements, approximately 0.5% of the risks it had written.

As of March 31, 2005, the Bond Insurer had net admitted assets of approximately \$3.215 billion, total liabilities of approximately \$2.040 billion, and total capital and policyholders’ surplus of approximately \$1.175 billion, determined in accordance with statutory accounting practices prescribed or permitted by insurance regulatory authorities.

The unaudited financial statements of the Bond Insurer as of March 31, 2005, the audited financial statements of the Bond Insurer as of December 31, 2004, and the audited financial statements of the Bond Insurer as of December 31, 2003, which have been filed with the Nationally Recognized Municipal Securities Information Repositories (“NRMSIRs”), are hereby included by specific reference in this Official Statement. Any statement contained herein under the heading “BOND INSURANCE,” or in any documents included by specific reference herein, shall be modified or superseded to the extent required by any statement in any document subsequently filed by the Bond Insurer with such NRMSIRs, and shall not be deemed, except as so modified or superseded, to constitute a part of this Official Statement. All financial statements of the Bond Insurer (if any) included in documents filed by the Bond Insurer with the NRMSIRs subsequent to the date of this Official Statement and prior to the termination of the offering of the Series 2005 Bonds shall be deemed to be included by specific reference into this Official Statement and to be a part hereof from the respective dates of filing of such documents.

The Bond Insurer also prepares quarterly and annual financial statements on the basis of generally accepted accounting principles. Copies of the Bond Insurer’s most recent GAAP and SAP financial statements are available upon request to: Financial Guaranty Insurance Company, 125 Park Avenue, New York, NY 10017, Attention: Corporate Communications Department. The Bond Insurer’s telephone number is (212) 312-3000.

The Bond Insurer’s Credit Ratings

The financial strength of the Bond Insurer is rated “AAA” by Standard & Poor’s, a Division of The McGraw-Hill Companies, Inc., “Aaa” by Moody’s Investors Service, and “AAA” by Fitch Ratings. Each rating of the Bond Insurer should be evaluated independently. The ratings reflect the respective ratings agencies’ current assessments of the insurance financial strength of the Bond Insurer. Any further explanation of any rating may be

obtained only from the applicable rating agency. These ratings are not recommendations to buy, sell or hold the Series 2005 Bonds, and are subject to revision or withdrawal at any time by the rating agencies. Any downward revision or withdrawal of any of the above ratings may have an adverse effect on the market price of the Series 2005 Bonds. The Bond Insurer does not guarantee the market price or investment value of the Series 2005 Bonds nor does it guarantee that the ratings on the Series 2005 Bonds will not be revised or withdrawn.

Neither the Bond Insurer nor any of its affiliates accepts any responsibility for the accuracy or completeness of the Official Statement or any information or disclosure that is provided to potential purchasers of the Series 2005 Bonds, or omitted from such disclosure, other than with respect to the accuracy of information with respect to the Bond Insurer or the Policy under the heading “BOND INSURANCE.” In addition, the Bond Insurer makes no representation regarding the Series 2005 Bonds or the advisability of investing in the Series 2005 Bonds.

THE CITY AND COUNTY AND THE DEPARTMENT

Purpose and Powers

The City and County. The City and County of Honolulu includes the entire island of Oahu and a number of outlying islands. Of the eight major islands that constitute the State of Hawaii, Oahu, with an area of 597 square miles, is smaller than the Islands of Hawaii and Maui but larger than the Islands of Kauai, Molokai, Lanai, Niihau and Kahoolawe. With slightly less than a tenth of the land area in the entire State, Oahu contains nearly three-fourths of the State’s resident population. Based on the 2000 U.S. Census, the resident population of the State was 1,211,537, and that of Oahu was 876,156, approximately 72% of the total State population. Honolulu is the seat of the State Government and is the State’s trade, finance, communication, and transportation center. Most Federal establishments and personnel (both civilian and military), manufacturing, major educational and scientific, and significant agricultural activities are located on Oahu.

City Council and Mayor. The City Council (the “City Council”) is the governing body of the City and County and it consists of nine members. All members are elected from nine districts to serve four year terms with a limitation of two consecutive full terms. Pursuant to the City Charter of the City and County, the City Council has the power, among other things: (i) to exercise the legislative power of the City, (ii) to enact operating and capital budget ordinances, (iii) with certain exceptions, to fix fees and charges for services rendered by the City, and (iv) to authorize the issuance of revenue bonds for the purpose of initiating, constructing, acquiring, extending, replacing or otherwise improving any revenue-producing facility. The Mayor is the Chief Executive Officer of the City. The Mayor is elected to serve a four year term with a limitation of two consecutive full terms. The Mayor exercises direct supervision over all agencies specifically identified in the City Charter and, through the Managing Director, exercises supervision over all other executive agencies of the City.

Department of Environmental Services. The Department of Environmental Services was established on July 1, 1998, pursuant to a plan of reorganization which combined certain components of the Department of Wastewater Management, the department which previously administered the Wastewater System, with other administrative departments having compatible functions. The Department of Environmental Services, among other things, is charged with the responsibility to administer the planning, design and construction of wastewater facilities, oversee the operation and maintenance of sewer lines, treatment plants and pumping stations, monitor the collection, treatment and disposal of wastewater, provide pumping of defective cesspools, provide solid waste processing, collection and disposal, promulgate rules and regulations as necessary to administer and enforce requirements established by law, and perform such other duties as may be required by law. The Department consists of four divisions: Environmental Quality, Treatment and Disposal, Collection System Maintenance and Refuse Collection and Disposal, plus an Office of Administrative Support.

Power to Fix and Collect Rates and Charges. By ordinance and resolution, the City Council requires that revenues of the Wastewater System be kept in the Sewer Fund and that the wastewater program shall be self-supporting. Consistent with such requirements, the Department is budgeted as a self-sustaining enterprise for the purpose of determining costs associated with providing wastewater services. Through the adoption of the annual operating and capital budgets, the revenue requirements and wastewater rates are reviewed to determine the

adequacy of revenues to meet needs. Pursuant to the Act and the City Charter, the City Council has the power to impose, prescribe and collect rates, rentals, fees or charges for the use and services of, and the facilities furnished by, the Wastewater System so that the Wastewater System will be and remain self-sustaining. The rates, rentals, fees or charges imposed and prescribed are required to produce revenues which will be at least sufficient to pay debt service on all revenue bonds issued for the purposes of the Wastewater System, including the Bonds, and including reserves therefor, to pay the costs of operation, maintenance and repair of the Wastewater System, and to carry out the covenants of all resolutions authorizing the issuance of revenue bonds for the purposes of the Wastewater System, including the Bond Resolution and the Second Resolution. The rates and charges fixed and imposed by the City Council are not subject to approval by any federal or state regulatory bodies. Rates and charges are determined on the basis of a recommendation by the Director of Environmental Services and the Mayor, subject to approval by ordinance of the City Council. An ordinance requires three readings and a public hearing for enactment by the City Council.

Department Work Force

The Department employs approximately 700 persons in various managerial, clerical, engineering and operational positions in support of wastewater activities. This work force, with the exception of 17 excluded and 4 exempt employees, is represented by one blue-collar, non-supervisory bargaining unit, one blue collar, supervisory bargaining unit, one white-collar, non-supervisory bargaining unit, one white-collar, supervisory bargaining unit, and one professional and scientific bargaining unit. All bargaining unit contracts are state-wide and apply to all State government and county government activities. Of the City and County's eight public bargaining units, all have received final and binding arbitration awards or have reached negotiated settlements resulting in two-year contracts beginning July 1, 2005 and ending June 30, 2007. All employees are covered by the Hawaii State Employees Retirement System. As of June 30, 2004, the total unfunded actuarial accrued liability for the State Retirement System was estimated to be approximately \$3.474 billion. The actuary for the State Retirement System does not provide a breakdown of the unfunded liability for the counties. Historically, the City and County's contribution has been approximately 14.7% of the total employer appropriation to the State Retirement System, of which the Department's contribution has been approximately 6.0%.

Department Principal Officers

The principal officers of the Department of Environmental Services include the Director, Deputy Director and Executive Assistant.

The following are brief biographies of the Department's principal officers:

Dr. Eric S. Takamura, P.E., Director. Dr. Takamura was appointed Director on April 6, 2005, after serving as Acting Director for approximately four months. Dr. Takamura's professional experiences include Assistant Professor in the Department of Civil Engineering at both Portland State University and the University of Hawaii; Assistant General Manager of Kuilima Development Company; Project Manager for R.M. Towill Corporation; and most recently, Vice President and Chief Operating Officer of a local engineering firm. He has a Doctor of Philosophy degree in Environmental Health Engineering from the University of Texas at Austin and a Bachelor of Science with Honors in Civil Engineering from the University of Hawaii at Manoa.

Kenneth A. Shimizu, Deputy Director. Mr. Shimizu was appointed Deputy Director on January 3, 2005, and brings his experiences as a controller and business owner. His knowledge of corporate administrative and financial functions, cash flow management, and customer service contributes to his oversight of the operation and management of the Department. Mr. Shimizu has a Bachelors of Business Administration in Finance from the University of Hawaii at Manoa.

Timothy A. Houghton, Executive Assistant. Mr. Houghton served as Executive Assistant for the Department of Wastewater Management from its creation on July 1, 1993, and has continued in that role with the Department of Environmental Services, except for the period from July, 2003, through December, 2004, when he served as Deputy Director of the Department. As Executive Assistant, among other things, Mr. Houghton is responsible for Department financial and personnel activities. Prior to that he worked on the Honolulu Rapid Transit Project and with the Department of Auditoriums. Mr. Houghton has a Bachelor of Arts degree from San

Francisco State University and a Master of Science in Systems Management degree from the University of Southern California.

THE WASTEWATER SYSTEM

Introduction

The Wastewater System services approximately 150,000 separate accounts and a population of approximately 640,000, which is approximately 71% of the total population of the City and County. The service area covers nearly 600 square miles. The customer base includes the residential population, business and industries, and other users located in the service area. Of the 150,000 accounts, approximately 140,000 are residential and provide 77.8% of the total revenue from sewer service charges; the remaining approximately 10,000 are non-residential, representing 22.2% of the total revenue from sewer service charges. See “CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS.” The average total volume of wastewater processed by the City and County’s Wastewater System was 122 MGD average day annual flow in 2004. A number of small private wastewater systems also serve some areas in the City and County. The average total volume of wastewater processed by all such private systems is 4.1 MGD.

General Description of Existing Facilities

The Wastewater System serving the island of Oahu is divided into eight wastewater basins for planning purposes: Central Oahu, East Mamala Bay, Kailua/Kaneohe/Kahaluu, North Oahu East/West, Waianae, Waimanalo, and West Mamala Bay. Each basin is served by a major wastewater treatment plant (“WWTP”). The function of each WWTP is to treat the wastewater by removing or reducing the levels of organic and inorganic materials contained in the wastewater to levels that satisfy federal and state permit requirements for the discharge of such wastewater into the ocean, streams, reservoirs or injection wells. In addition to treatment facilities, the Wastewater System includes collection, pumping and other related facilities.

A description of the wastewater basins and major facilities is as follows:

East Mamala Bay. The largest and the most densely populated basin is East Mamala Bay. Approximately 385,300 people reside in East Mamala Bay, representing approximately 44% of the resident population of the entire island. The basin is served by the Sand Island WWTP, a primary plant, and the largest treatment facility in terms of wastewater flow. The treatment plant has a primary treatment capacity of 86 million MGD of wastewater flow, and currently treats 72.68 MGD.

West Mamala Bay. West Mamala Bay is the second largest basin and includes Ewa, Central Oahu as far north as Mililani, and the Halawa to Pearl City area of the Primary Urban Center. The population of the basin area is approximately 251,200, or 29% of the estimated population of Oahu. The basin is served by the Honouliuli WWTP, which is the second largest treatment plant in the Wastewater System, with a primary treatment design capacity of 40 MGD and a secondary treatment design capacity of 13 MGD. It currently processes 27.18 MGD of wastewater flow. The secondary treated effluent is provided to a recycled water facility.

Kailua/Kaneohe/Kahaluu. The third largest basin includes the communities of Kailua, Kaneohe, and Kahaluu and surrounding areas in the eastern part of the island. The eastern portion of Oahu is also referred to as the Windward basin area. The basin area population is nearly 105,000, or approximately 12% of the island’s population. The basin is served by the Kailua Regional WWTP, the third largest treatment plant in the Wastewater System. The Kailua WWTP has a design capacity of 16 MGD and currently treats about 15.44 MGD of wastewater flow.

North Oahu (East and West). The North Oahu area is largely unsewered. Small facilities existing are the Kahuku WWTP (0.4 MGD capacity, secondary) and the Pa’alaa Kai WWTP (0.15 MGD capacity, secondary).

Waianae. The Waianae basin serves the west coast of the island, which has a population of approximately 40,600. The Waianae WWTP has the capacity to process 5.5 MGD at a secondary level.

Central Oahu. Central Oahu, including military bases and the communities of Wahiawa and Whitmore Village, is served by the Wahiawa WWTP (2.6 MGD capacity, secondary).

Waimanalo. The Waimanalo basin is served by the Waimanalo WWTP, which is owned by the State and operated by the City. It is a secondary plant with a capacity of 0.7 MGD and serves the Waimanalo community of 9,100.

The Sand Island WWTP, the Honouliuli WWTP and the Kailua Regional WWTP are the three largest WWTPs. The remaining WWTPs provide treatment of wastewater to the rest of the island. Though the four basin areas including Central Oahu, North Oahu, Waianae, and Waimanalo comprise the majority of the geographical area of the island, the population density is much lower in comparison to the East and West Mamala Bay and the Kailua/Kaneohe/Kahaluu basin areas. The combined population of the four basin areas is less than 15% of the total population of Oahu. The total design capacity of the WWTPs in the 4 basin areas is approximately 9 MGD and the current wastewater flow is approximately 6.0 MGD. Two private wastewater systems provide collection and treatment for the communities of Hawaii Kai and Laie. The Hawaii Kai system has an average flow of 3.8 MGD, including flows from the City and County's Kuliouou Wastewater Pumping Station ("WWPS"), and the Laie system has an average flow of 0.6 MGD. The two systems combined process less than 4% of the average flow of the City and County's Wastewater System. The City and County has entered into an agreement to acquire the Laie wastewater system over the next two years.

For a more detailed description of the Wastewater System, see Appendix A, "Engineer's Report."

Environmental Compliance

The WWTPs and other facilities operated by the Department are governed by either National Pollutant Discharge Elimination System (NPDES) permits or State of Hawaii Department of Health Underground Injection Control permits. Since 1991, the United States Environmental Protection Agency ("EPA"), the State of Hawaii and several environmental groups have filed various legal and regulatory actions against the City and County alleging violations of the federal Clean Water Act and the several NPDES and State of Hawaii permits held by the Department. The City and County has entered into settlements with respect to several of such actions. The consent decrees entered into by the City and County in connection with such settlements require the City and County, among other things, to rehabilitate and expand certain existing facilities, to implement pretreatment programs; efficient reuse and biosolids reuse, and to construct new facilities. The Department has undertaken the rehabilitation and expansion of existing facilities, the implementation of pretreatment programs, effluent reuse and biosolids reuse, and the construction of new facilities in the last several years for the purpose of complying with the existing consent decrees. The Department has developed the 2006-2010 Capital Improvement Program, the 2006-2015 Capital Improvement Program and the 1998-2017 Capital Improvement Program, in part, to comply with existing consent decrees and administrative orders. See also "PENDING LITIGATION."

The Consulting Engineer has concluded that, except for the Sand Island WWTP, facilities of the Wastewater System are consistently meeting current regulatory requirements and are operated and maintained in accordance with standard utility practices. However, the Consulting Engineer has also concluded that the collection and pumping facilities of the Wastewater System do not meet all of the current and anticipated federal and state regulatory requirements and will require additional capacity to serve projected growth in the service area. The Department has developed plans which will provide for anticipated requirements and established procedures.

See "CAPITAL IMPROVEMENT PROGRAM" and Appendix A, "Engineer's Report."

Projected Customer Growth

The resident population in Oahu, the area served by the Wastewater System, is projected to grow modestly through 2020. The actual and projected resident population, by basin area, for the years 1990 through 2020 is shown in the following tables. The majority of growth between the years 1990 and 2020 is expected to occur in East and West Mamala Bay. Of the total population growth projected to occur between 1990 and 2020, approximately 94,000 or 59% is expected to take place in West Mamala Bay and over 54,000, or 34%, is expected to occur in East

Mamala Bay. The tables show an estimated average annual population increase of 5,308 between 1990 and 2020, or roughly 0.5% annually.

Table 1

**Actual and Projected Resident Population
By Basin⁽¹⁾, Oahu, 1990-2020**

Basin	1990	2000	2005	2010	2015	2020
East Mamala Bay	380,157	374,366	385,303	402,731	421,828	434,250
West Mamala Bay	199,005	239,713	251,239	267,301	273,752	293,036
North Oahu (East/West) ⁽²⁾	29,992	31,094	31,331	31,372	34,325	34,924
Waianae	37,411	39,271	40,635	41,094	41,336	42,183
Central Oahu	44,540	45,254	44,996	44,716	44,546	44,231
Kailua/Kaneohe/Kahaluu	108,639	106,300	105,502	104,738	108,812	109,214
Waimanalo	<u>9,055</u>	<u>9,161</u>	<u>9,099</u>	<u>9,043</u>	<u>9,631</u>	<u>9,749</u>
Total	808,799	845,159	868,105	900,955	934,230	967,587

Notes:

1 Population from Planning Department. Military bases are included (City and County of Honolulu Planning Department, 2000; City and County of Honolulu)

2 Includes population of Laie, which is currently served by a private sewer system operator, but which will be served by the City and County of Honolulu beginning within the next two years.

Source: City and County of Honolulu, Department of Environmental Services, City & County of Honolulu, Department of Planning and Permitting, 2001.

Table 2

**Actual and Projected Percentage Growth in Resident Population
By Basin, Oahu, 1990-2020**

Basin	1990-2000		1990-2020	
	Average Annual Change	Percent of Total Growth	Average Annual Change	Percent of Total Growth
North Oahu (East)	(45)	-1.2%	49	0.9%
Kailua-Kaneohe/Kahaluu	(234)	-6.4%	19	0.4%
Waimanalo	11	0.3%	23	0.4%
East Mamala Bay	(579)	-15.9%	1,803	34.0%
West Mamala Bay	4,071	112.0%	3,134	59.1%
Waianae	186	5.1%	159	3.0%
Wahiawa	71	2.0%	(10)	-0.2%
North Oahu (West)	155	4.3%	131	2.5%
Total	3,636	100.0%	5,308	100.0%

Source: City & County of Honolulu, Department of Environmental Services, City & County of Honolulu, Department of Planning and Permitting, 2001.

The Department has developed the 2006-2010 Capital Improvement Program, the 2006-2015 Capital Improvement Program and the 1998-2017 Capital Improvement Program, in part to provide new facilities which

will be required to reliably serve projected growth in the number of customers served by the Wastewater System. See “CAPITAL IMPROVEMENT PROGRAM” and Appendix A, “Engineer’s Report.”

CAPITAL IMPROVEMENT PROGRAM

The Department staff manages and updates at least annually a long-range Capital Improvement Program (the “CIP”) to achieve several goals. The CIP is a long-range planning tool used to estimate project costs and timing of expenditures over a 20-year period, currently through 2017. The 2006-2010 Capital Improvement Program and the 2006-2015 Capital Improvement Program are part of this 20-year plan. The Department develops the CIP with the objective of providing safe and reliable facilities to process the wastewater discharge of all sewer customers throughout Oahu. CIP projects are needed for the rehabilitation of existing facilities, the expansion of capacity to accommodate growth, and the improvement of facilities and processes.

EPA Consent Decree

The City and County and the EPA have entered into a consent decree that has established the City’s direction on future wastewater issues. The overall goal established by the consent decree is to develop a proactive plan to reduce and prevent wastewater spills and bypasses from the collection system, pump stations, and treatment plants. See “PENDING LITIGATION” herein for a description of a lawsuit filed against the City and County in the Sierra Club and other environmental groups seeking enforcement of the consent decree with the EPA.

A number of projects identified in the CIP are designed to comply with an EPA consent decree approved October 17, 1995. Consent decree projects are developed to meet three major program objectives:

1. *Pretreatment*: Source control program to control introduction of inappropriate materials into the collection and treatment system. This program does not require funding of any CIP project.
2. *Collection system compliance*: Spill reduction program for both dry weather spills, and wet weather spills.
3. *Avoided cost*: Additional measures taken by the Department to avoid fines for violations or noncompliance.

Criteria for Ranking CIP Projects by Priority

The Department considers the CIP to be a flexible tool which allows the Department staff to determine the impact of adjusting the phasing and priority of projects. As of the middle of 2005, the long-range CIP covering the 20-year period from 1998 through 2017 included a list of projects with estimated appropriations totaling approximately \$2.3 billion (in inflated dollars). Many of the projects shown in the CIP may not begin in the year specified or at all if needs change. The Department staff has developed a policy for ranking the CIP projects by priority to determine order and timing of projects. The policy is shown in the following table, with the highest priority criteria listed first:

Table 3

Priority for CIP Projects

Priority Class	Description
I	Safety and public health – immediate
II	Protection of the environment – immediate
III	Permit and regulatory compliance – immediate
IV	Completion of ongoing projects
V	Preventive
VI	Funding requirements
VII	System expansion
VIII	Other

The rankings are intended as guidelines for CIP project planning, not as hard and fast rules. A project considered in a low priority class may be upgraded to a high priority position in the CIP due to any number of factors. For example, if a service area is very close to reaching and surpassing the capacity of its wastewater facilities, the expansion of the system in that area rises in priority. System expansion can entail projects which affect permit and regulatory compliance, protection of the environment, or safety and public health. Through the use of these guidelines combined with analyses of funding and other resource constraints, staff can develop a CIP which best satisfies the needs of the Department customer base. The 1998-2017 Capital Improvement Program was developed using these CIP guidelines and constitutes the current 20-year CIP.

Classification of CIP Projects

The City and County expects to use various funding sources to finance CIP projects: (i) proceeds of the Series 2005 Bonds, (ii) proceeds of additional Bonds and Subordinate Obligations to be issued, (iii) proceeds of Reimbursable Obligations previously issued and currently available, (iv) proceeds of wastewater revenue bonds previously issued and currently available, (v) the Net Revenues of the Wastewater System, and (vi) Wastewater System Facilities Charge. Revenues from Wastewater System Facility Charges are intended to cover a portion of the project expenditures relating to expansion of the Wastewater System to serve future growth in the number of customers. Revenues from sewer service charges are earmarked for the expenditures resulting from rehabilitation or upgrade of the wastewater system for existing users. To effectively determine the costs to be recouped by these respective charges, the Department makes a fair estimate of the share of costs attributable to expansion and rehabilitation. Where an improvement benefits both existing and future users, the Department identifies the relative portion allocable to each. The classes of CIP projects include system expansion, system upgrade, and replacement/rehabilitation.

System expansion: Improvements which increase the design capacity of treatment, transmission, or support facilities and equipment to accommodate new or future growth. Future users would finance system expansion project costs partially through revenues from Wastewater System Facility Charges.

System upgrade: Improvements which upgrade the service level standard. For example, an upgrade to secondary treatment processes where only primary treatment processes were used. To fairly allocate costs between future and existing users, the portions of upgrade costs attributable to expansion and current use must be identified.

Replacement/rehabilitation: Improvements which replace or rehabilitate facilities serving existing development. Existing users pay the costs of replacement and rehabilitation projects through sewer service charges.

2006-2010 Capital Improvement Program

To meet certain consent decrees entered into by the Department with Federal and State regulatory bodies and to reliably serve projected growth in the number of customers served by the Wastewater System, the Department has developed and adopted the 2006-2010 Capital Improvement Program. The additions and improvements to the Wastewater System, the costs of which are to be financed in part from the proceeds of the Series 2005 Bonds, are part of the 2006-2010 Capital Improvement Program. The City and County expects to appropriate approximately \$792.4 million (in inflated dollars) for the 2006-2010 Capital Improvement Program. A portion of these appropriations will actually be expended after the 2006-2010 period. For actual expenditures during the 2006-2010 period, see Appendix A, "Engineer's Report." The projected appropriations for the various CIP projects and the expected sources of funding for the 2006-2010 Capital Improvement Program are set forth in the following tables.

Table 4

**Projected Appropriations for
2006-2010 Capital Improvement Program**

<u>Project</u>	<u>Projected Cost</u>
CIP Projects	\$741,063,000
Project Management	30,057,000
<u>Capital Equipment</u>	<u>21,230,000</u>
Total	\$792,350,000

Table 5

**Expected Sources of Funding for
2006-2010 Capital Improvement Program**

<u>Funding Source</u>	<u>Projected Amount</u>
Subordinate Obligations ⁽¹⁾	\$ 50,000,000
Facility Charges ⁽²⁾	40,610,000
Net Revenues ⁽³⁾	19,798,000
Series 2005 Bonds	140,000,000
<u>Additional Bonds</u>	<u>541,944,000</u>
Total	\$792,350,000

(1) State revolving fund loan proceeds.

(2) Fees collected for new Wastewater System connections.

(3) Cash funded CIP.

2006-2015 Capital Improvement Program

The 2006-2015 Capital Improvement Program is part of the 1998-2017 Capital Improvement Program. The City and County expects to appropriate approximately \$1.327 billion (in inflated dollars) for the 2006-2015 Capital Improvement Program. A portion of these appropriations will actually be expended after the 2006-2015 period. For actual expenditures during the 2006-2015 period, see Appendix A, "Engineer's Report." The projected appropriations for the various CIP projects of and the expected sources of funding for the 2006-2015 Capital Improvement Program are set forth in the following tables.

Table 6

**Projected Appropriations for
2006-2015 Capital Improvement Program**

<u>Project</u>	<u>Projected Cost</u>
CIP Projects	\$1,223,988,000
Project Management	57,272,000
<u>Capital Equipment</u>	<u>45,860,000</u>
Total	\$1,327,120,000

Table 7

**Expected Sources of Funding for
2006-2015 Capital Improvement Program**

<u>Funding Source</u>	<u>Projected Amount</u>
Subordinate Obligations ⁽¹⁾	\$ 100,000,000
Facility Charges ⁽²⁾	77,700,000
Net Revenues ⁽³⁾	206,006,000
Series 2005 Bonds	140,000,000
<u>Additional Bonds</u>	<u>803,419,000</u>
Total	\$1,327,120,000

(1) State revolving fund loan proceeds.

(2) Fees collected for new Wastewater System connections.

(3) Cash funded CIP.

1998-2017 Capital Improvement Program

The 1998-2017 Capital Improvement Program (“CIP”) is the current twenty-year CIP the Department has undertaken. The City and County expects to appropriate approximately \$2.3 billion (in inflated dollars) for the 1998-2017 Capital Improvement Program. A portion of these appropriations will actually be expended after the 1998-2017 period. The projected appropriations for the various CIP projects of and the expected sources of funding for the 1998-2017 Capital Improvement Program are set forth in the following tables.

Table 8

**Projected Appropriations for
1998-2017 Capital Improvement Program**

<u>Project</u>	<u>Projected Cost</u>
CIP Projects	\$2,071,401,000
Project Management	108,579,000
Capital Equipment	76,910,000
<u>Ongoing Projects</u>	<u>84,420,000</u>
Total	\$2,341,710,000

Table 9

**Expected Sources of Funding for
1998-2017 Capital Improvement Program**

<u>Funding Source</u>	<u>Projected Amount</u>
Reimbursable Obligations ⁽¹⁾	\$ 83,985,000
Subordinate Obligations ⁽²⁾	219,146,000
Facility Charges ⁽³⁾	129,693,000
Net Revenues ⁽⁴⁾	364,706,000
Series 1998 Bonds	50,000,000
Series 2001 Bonds	125,000,000
Series 2003 Bonds	180,022,000
Series 2005 Bonds	140,000,000
<u>Additional Bonds</u>	<u>1,049,159,000</u>
Total	\$2,341,710,000

(1) *Previously issued general obligation bonds.*

(2) *State revolving fund loan proceeds.*

(3) *Fees collected for new Wastewater System connections.*

(4) *Cash funded CIP.*

HISTORICAL AND PROJECTED REVENUES, EXPENSES AND COVERAGES

Since its initial revenue bond issue in 1998, the Department has exceeded coverage requirements, as shown in Table 10, which sets forth historical and projected revenues, expenses and debt service coverage of the Wastewater System.

Table 10

Historical and Projected Revenues, Expenses and Debt Service Coverages
(\$ in thousands)
(Fiscal Year Ending June 30)

	Actual		Budgeted		Projected		
	2003 ⁽¹⁾	2004 ⁽¹⁾	2005	2006	2007	2008	2009
Revenues ⁽²⁾							
Sewer Service Charges ⁽³⁾	\$111,878	\$111,886	\$113,000	\$142,680	\$157,390	\$173,600	\$191,490
Interest Earnings	2,032	1,540	5,300	1,300	3,100	3,800	4,200
Other Revenues	57	69	58	58	58	58	58
Total Revenues	\$113,967	\$113,495	\$118,358	\$144,038	\$160,548	\$177,458	\$195,748
Operating Expenses ⁽⁴⁾	64,193	65,213	75,074	89,679	90,200	92,870	95,600
Net Revenues	\$49,775	\$48,282	\$43,284	\$54,359	\$70,348	\$84,588	\$100,148
Annual Debt Service							
Senior Lien Bonds ⁽⁵⁾	12,710	10,641	14,332	12,947	23,112	34,136	46,525
D/S Coverage ⁽⁶⁾	3.92x	4.54x	3.02x	4.20x	3.04x	2.48x	2.15x
Senior and Junior Lien Bonds ⁽⁷⁾	24,171	22,102	26,339	33,115	45,732	61,530	74,745
D/S Coverage ⁽⁶⁾	2.06x	2.18x	1.64x	1.64x	1.54x	1.37x	1.34x
Total Obligations ⁽⁸⁾	35,312	33,572	44,353	46,563	61,125	76,366	89,899
D/S Coverage ⁽⁶⁾	1.52x	1.53x	1.12x	1.33x	1.28x	1.21x	1.21x

(1) Audited.

(2) Does not include System Facility Charges, which are pledged under the Resolution but are not defined in Revenues.

(3) Sewer service charges are anticipated to be increased by 25% in 2006, 10% in 2007, and 10% in 2008.

(4) Operating expense projections reflect both anticipated operational changes and beyond 2005 are inflated at 3% per year for expenses and 3% per year for personnel costs. In year 2005 and 2006, additional electrical costs are included for required one year test of full operation of newly installed ultraviolet disinfection facility at the Sand Island WWTP. It is anticipated that this facility will only be operated on a limited, as needed, basis beyond that one year period. Operating expenses do not include debt service, depreciation, or cash expenditures on capital improvements.

(5) Includes actual debt service for Senior Series 1998, 2001 and assumes 5.5% interest rate for all future issues.

(6) Minimum debt service coverage requirements are: Senior Lien Bonds – 1.2x; Senior and Junior Lien Bonds – 1.1x; Total Obligations – 1.0x. Debt service coverage for Total Obligations includes revenue from System Facility Charges.

(7) Includes actual debt service for Senior and Junior Series 1998 and Senior Series 2001 and 2005 Bonds and assumes a 4% interest rate for Junior Series 2003 Bonds (auction rate certificates) and a 5.5% interest rate for all future Senior Bond issues.

(8) Includes actual debt service for existing obligations including Senior and Junior Bonds; reimbursable General Obligation Bonds; State Revolving Funds Loans; and any other debt obligations and assumes future interest rates for Revenue Bonds as indicated above.

CONCLUSIONS OF CONSULTING ENGINEER

The Consulting Engineer has concluded that (i) the estimated project costs and construction schedules that have been developed for the projects to be financed, including the projects to be financed from the proceeds of the Series 2005 Bonds, are reasonable and achievable; (ii) the 1998-2017 Capital Improvement Program is technically sound and conforms with good engineering practice and the estimated total costs of the program have been realistically assessed; and (iii) completion of the proposed projects will permit the City and County to remain in compliance with all federal, state, and local regulations regarding the treatment and discharge as expressed in the current NPDES permit and consent decrees.

The Consulting Engineer has projected revenues, expenses and coverages for the Wastewater System for the Fiscal Years 2006 to 2015, inclusive. The projections are based on inflated dollars (*i.e.*, adjusted from 2005 dollars). The projections indicate that with respect to the Fiscal Years 2006 to 2015, inclusive, the City and County can (i) issue the Series 2005 Bonds to finance \$140 million of necessary additions and improvements to the Wastewater System, to fund the Common Reserve Account in an amount sufficient to satisfy its requirement, and to pay the costs of issuing the Series 2005 Bonds; (ii) finance an additional \$1.19 billion of improvements to the Wastewater System from proceeds of additional Bonds and Subordinate Obligations to be hereafter issued, proceeds of Reimbursable Obligations previously issued and currently available, the Net Revenues and Wastewater System Facility Charges over the ten year period; and (iii) fully meet all reserve funding and coverage requirements under the Bond Resolution and the Second Bond Resolution by raising sewer rates and charges by 25% in Fiscal Year 2005-2006 and another 4% to 10% in each of the Fiscal Years thereafter, and by raising Wastewater System Facility Charges by 3% in Fiscal Year 2005-2006 and another 3% in each of the Fiscal Years thereafter. The average monthly residential wastewater charge is expected to increase from \$41.31 to \$83.91 (in inflated dollars) by 2015. The Wastewater System Facility Charge is expected to increase from \$4,780 to \$6,236 (in inflated dollars) by 2015. The revenues from the Wastewater System Facility Charge were 1.8% of total revenues of the Wastewater System in fiscal year 2003-2004 and are projected to be 3.2% by fiscal year 2014-2015. The Consulting Engineer has concluded that current customer rates and charges for the City and County compare favorably to other similar wastewater agencies. See “CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS — Rates and Charges” and Appendix A, “Engineer’s Report” for a discussion of the Rate Ordinance.

The Consulting Engineer, based upon its studies, the assumptions discussed in the Engineer’s Report and its review of the data and analysis provided by the City and County and its consultants, has concluded in its Engineer’s Report that:

1. All City and County-owned WWTPs are currently meeting national and state discharge requirements. The Sand Island WWTP plant experienced some difficulties in 2003 in meeting the 30 percent BOD reduction requirement. The 2006-2010 CIP Projects implement the modifications required to improve plant operations, and to accommodate planned growth, as well as projects required by and identified in the new discharge permit.
2. The CIP includes improvements to the Wastewater System collection and pumping facilities to assure compliance with current and anticipated federal and state regulatory requirements. These collection and pumping facilities constitute much of the need for capital facility improvements.
3. Completion of the proposed CIP projects constituting the 1998-2017 Capital Improvement Program described in the Engineer’s Report will permit the City and County to remain in compliance with all federal, state, and local regulations regarding the treatment and discharge as described in the current NPDES permit and consent decrees.
4. An estimated \$1.88 billion (in 2005 dollars) of non-discretionary CIP project expenditures for various treatment, collection and other facilities are required to be constructed during the 20-year CIP program. This is to eliminate the current and projected critical deficiencies, to meet consent decree milestones, and to provide a wastewater system in a satisfactory operating condition based on projected wastewater usage and environmental and other regulatory requirements. The remaining approximately \$0.24 billion (in 2005 dollars) of CIP projects are discretionary, and have been identified primarily to improve wastewater treatment and collection systems efficiency. These CIP project expenditures are to be funded from proceeds of bonds, including the Series 2005 Bonds, and from net revenues and other charges.
5. The \$2.1 billion of CIP expenditure is technically sound and conforms with good engineering practice and the estimated total costs of the CIP have been realistically assessed.
6. The projects to be financed by proceeds of the Series 2005 Bonds are the highest priority projects required to meet consent decree requirements and protect public health. They are included in recently completed facility plans, which identify the need for projects through the year 2017, and provide the most cost effective facilities evaluated in those plans.

7. The estimated project costs and construction schedules that have been developed for the projects of the 2006-2010 Capital Improvement Program are reasonable and achievable.
8. The operations of the Wastewater System are directed by a professional staff for the disciplines of operations specialists, maintenance (including electrical, instrumentation and mechanical), laboratory personnel and other technical support personnel.
9. The financial projections with respect to the Wastewater System are based on reasonable and conservative assumptions and should fairly reflect the financial performance of the Wastewater System.
10. Current customer rates and charges for the City and County of Honolulu compare favorably to other similar wastewater agencies. Projected customer rates and charges are based on periodic larger increases followed by extended periods of stable rates. This rate setting philosophy results in projected rates and charges which are reasonable when compared on an equivalent annual basis.
11. In the opinion of Carollo Engineers, projected sewer service and system facility charges will provide revenue sufficient to:
 - Meet all projected costs of operation, maintenance and routine replacement of sewer system facilities.
 - Meet the existing debt service obligations and the projected requirements for the Series 2005 Bonds and future bond issues.
 - Provide sufficient revenue to pay the costs of the City and County of Honolulu's CIP through the end of the forecast period.
 - Meet reserve requirements of bond resolution.
12. The funds obtained from the sale of the Series 2005 Bonds, current cash reserves, fees collected over the next few years and future bond issues will be adequate to fund these current CIP projects.
13. The rate at which growth occurs will not affect the ability of the City and County to meet its debt obligations because the growth is a small component of the overall costs and revenues associated with the financial projections. In general, many of the CIP projects of the 1998-2017 Capital Improvement Program are necessary and must proceed based on consent decree requirements and public safety and health concerns with or without any additional connections.

CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS

Management's Discussion of Financial Performance

In the period since the wastewater program became fully self-supporting in 1993, the program's financial position has been consistently strong. The change to enterprise fund status in 1998 further strengthened the position of the utility through clearer definition of enterprise assets, understanding of their current value, and clarity in responsibilities. The issue of the initial Wastewater Revenue bonds in 1998 accompanied by a strong debt and financial policy adopted by the City Council served to insure a continuing commitment to a strong financial posture for the wastewater enterprise.

Sewer service charge revenue grew with the rate increase effective July 1, 1993, and had been held steady since that time. However, the City recently adopted the Rate Ordinance providing for immediate increases in wastewater rates and future rate adjustments for a period covering July 1, 2005 through July 1, 2010. See "Rates and Charges" below. Revenues have been sufficient throughout the period to meet all operation and maintenance and debt service requirements, including coverage since 1998, without a need for rate increases. Water conservation

efforts have held water use at the same level for several years; however, the significant base component of the rate structure and growth in customers has precluded these efforts from having a major impact on revenues. The sewer service charge program will remain strong reflecting the high residential component of wastewater customers and the lack of any single large commercial customer.

Receipts from the Wastewater System Facility Charge have increased over the past two years reflecting improved local economic conditions allowing development and a significant rate increase effective July 1, 2003. However, the Wastewater System Facility Charge accounts for less than 3% of revenues, is solely dedicated to expansion, and is not considered when calculating debt service coverage for the Bonds and Subordinate Obligations.

Equally important are continuing efforts to control increases in expenses. Operational expenditures and budgets have grown by approximately 3% per year since 1998 relatively consistent with minimal increase for inflation and new facilities. Continuing analysis of staffing levels, operational procedures, and automation opportunities will help control expenses.

Net revenues have decreased over the period, including fiscal years 2002 and 2003, reflecting increased operating expenses and stable rates. The enterprise has continued to maintain a surplus throughout the period.

As part of the commitment to ensure the financial strength of the Wastewater System, the City Council adopted Ordinance No. 05-006 on March 31, 2005, pledging not to transfer Sewer Fund monies to the City's General Fund.

In the opinion of the Department, the financial position of the Wastewater Enterprise is strong, with a substantial reserve balance which provides reasonable protection against unforeseen events and financial flexibility for the future. Financial planning continues to identify the best alternative to maintain a strong financial posture while providing quality service to the customer and the community at a reasonable price. City Council and Administration policies support the continuing revenue levels necessary to provide for current and future requirements.

Billing and Collection

Over 90% of Wastewater System sewer service charge billing is done by the Board of Water Supply through inclusion on the water bill. This billing program consistently has a delinquency (bills over 90 days old) of less than 2.4% and an uncollectable rate of less than 1.0%.

Should bills not be paid, the authority exists, and has been exercised, to terminate water service for non-payment of water and sewer service charges.

Ten Largest Customers

The ten largest customers, listed below, of the Wastewater System account for less than 8% of the annual revenues of the system.

Table 11

Ten Largest Customers

Customer	Sewer Service Charges (FY04)	Percentage of Revenues
Housing & Community Development Corp of Hawaii	\$1,225,605.07	1.08%
State of Hawaii Department of Education	1,222,286.76	1.08
State of Hawaii, Department of Transportation, Airports	1,052,943.16	0.93
University of Hawaii	975,974.79	0.86
Hilton Hotel Corp	726,395.25	0.64
State of Hawaii, Halawa Correctional Facility	296,529.12	0.27
Hyatt Regency Waikiki	252,391.38	0.23
United Laundry Service	221,709.60	0.20
City and County of Honolulu, Honolulu Department of Parks & Recreation	195,023.72	0.18
State of Hawaii, Department of Accounting and General Services	194,487.76	0.18

Certain operating and financial statistics of the Department are summarized in the following tables. Unless otherwise noted, tables provided herein contain data furnished by the City and County.

Table 12

Board of Water Supply (BWS) and Wastewater Customer Accounts as of April 2005

Customer Class	A	B	C	D	E	F	G	J	L	M	N	P	Q		
	Sewer Regular Monthly Charges	Cesspool Monthly Charge (Contract)	Cesspool Per Call	Separate BWS Water Meter (domestic use)	Cesspool Chemical Treat	Agreed to Monthly Charge	Sewer No Charge	Non-residential SS surcharge	Private Water Well	Private Wastewater Meter	Private Water Meter	Minimum Monthly Charge Only	Septic System	Total	Percent Accounts
1 - Public Sewer															
10 - Single family/duplex	124,302	7	10,661	0	0	6	8,401	0	0	0	49	1	570	143,997	89.09%
15 - Mixed residential	0	0	4	0	0	0	189	0	0	0	7	0	1	201	0.12%
20 - Multi-family	5,901	3	93	0	0	0	387	0	0	0	72	0	3	6,456	4.00%
25 - Mixed users	4	0	6	0	0	3	255	0	0	0	26	0	0	294	0.18%
Total BWS residential accounts	130,207	10	10,764	0	0	9	9,232	0	0	0	154	1	574	150,951	93.40%
Wastewater Residential Accounts	130,207	10	0	0	0	9	0	0	0	0	154	1	0	130,381	94.85%
30 - Commercial	4,708	0	524	0	0	20	1,401	30	2	0	159	57	27	6,298	4.29%
40- Hotels	315	0	7	0	0	0	3	0	2	0	0	0	0	327	0.20%
50 - Industrial	458	0	86	0	0	1	7	0	0	0	0	0	3	555	0.34%
61 - US Military Installation	9	0	7	0	0	0	13	0	0	0	2	0	1	32	0.02%
62 - US Non-military	25	0	8	0	0	0	5	0	0	0	1	0	0	39	0.02%
63 - State	231	0	107	0	0	178	318	0	1	0	12	0	2	849	0.53%
65 - City	131	0	128	0	0	202	433	0	0	0	4	44	5	947	0.59%
70 - Agriculture	2	0	402	0	0	0	21	0	0	0	0	0	13	438	0.27%
80 - Religious	460	0	52	0	0	4	9	0	0	0	26	0	5	556	0.34%
Total BWS Non-residential Accounts	6,239	0	1,321	0	0	405	2,210	30	5	0	204	101	56	10,647	6.60%
Wastewater Non-residential Accounts	6,239	0	0	0	0	405	0	30	5	0	204	101	0	7,084	5.15%
Total BWS Accounts	136,546	10	12,085	0	0	414	11,452	30	5	0	358	102	630	161,622	100%
Total Wastewater Accounts	136,546	10	0	0	0	414	0	30	5	0	358	102	0	137,465	100%
Percent Total BWS Accounts	84.48%	0.01%	7.48%	0.00%	0.00%	0.26%	7.08%	0.02%	0.00%	0.00%	0.22%	0.06%	0.39%	100.00%	
Percent Wastewater Accounts	99.33%	0.010%	0.00%	0.00%	0.00%	0.30%	0.00%	0.02%	0.00%	0.00%	0.26%	0.07%	0.00%	100.00%	

Table 13
History of New Sewer Connections by Type

Fiscal Year Ending	Single Family New Units	Multi Family		Nonresidential ESDUs	Total ESDUs
		New Units	ESDUs		
2000	1,527	69	48	36	1,611
2001	1,236	422	295	46	1,577
2002	974	541	379	36	1,389
2003	1,078	915	638	135	1,851
2004	1,437	1,519	1,063	19	2,519
5 year average	1,250	693	485	54	1,789
Projected annual growth	1,300	343	240	60	1,600

Table 14
Existing Sewer Users
Fiscal Year Ended June 30, 2004

Customer Classification	Number of Living Units	Number Of Equivalent Single-Family Dwelling Units (ESDUs)	Estimated Wastewater Flow (MGD)
Residential			
Single family/duplex	129,187	129,187	39.402
Multi-family residences	111,436	78,005	23.847
Total residential	240,623	207,192	63.249
Nonresidential	N/A	77,967	29.857
Infiltration/Inflow	N/A	N/A	26.147
Total	240,623	285,159	119.253

Table 15
Historic Population Growth
Oahu, 1995 - 2004

Calendar Year	Resident Population	De facto Population*
1995	881,399	921,626
1996	883,443	921,609
1997	886,711	932,931
1998	886,909	931,439
1999	878,906	927,689
2000	875,881	925,444
2001	884,176	928,134
2002	869,019	942,193
2003	893,358	939,189
2004	899,593	949,782

Source: State of Hawaii Department of Business, Economic Development & Tourism, Data Book, 2003. U.S. Census 2000.
*Includes visitor population.

Table 16**Number of Equivalent Single Family Dwelling Units (ESDUs)**

Fiscal Year Ending 6/30	Single-Family Units	Multifamily Units	Commercial ESDUs	Total ESDUs
1993	126,392	109,736	76,815	280,985
1994	128,193	111,436	78,005	284,165
1995	129,397	111,717	76,202	285,710
1996	120,810	108,437	75,907	274,076
1997	121,725	109,514	76,405	275,691
1998	122,723	109,740	76,563	276,965
1999	124,110	109,862	76,648	278,462
2000	125,637	109,931	76,696	280,073
2001	126,873	110,226	76,742	281,401
2002	128,109	110,521	76,788	282,729
2003	129,187	111,436	78,005	284,580
2004	130,624	112,955	78,489	287,099

Table 17**Wastewater Flows by Treatment Facility (MGD)⁽¹⁾**

<u>Treatment Facility⁽²⁾</u>	<u>Design Capacity⁽³⁾</u>	<u>2004 Flow</u>	<u>Projected Flow (2020)</u>
Sand Island	86.10	72.68	92.60
Kahuku WWTP	0.42	0.18	0.15
Honouliuli WWTP	39.90	27.18	32.80
Waimanalo WWTP	0.74	0.67	0.62
Kuliouou WWPS (Hawaii Kai WWTP) ^{(2), (4)}	N/A	0.36	0.38
Wahiawa WWTP	2.63	2.05	1.89
Kailua WWTP	16.01	15.44	13.40
Waianae WWTP	5.46	3.54	3.50
Paalaa Kai WWTP	0.15	0.09	0.14

(1) Average day annual flow (ADAF), MGD.

(2) Does not include 0.36 MGD of flow from the City and County's Kuliouou WWPS which is treated by the Hawaii Kai WWTP, a private treatment facility.

(3) ADAF estimated based on 105% of design capacity for average dry weather flow.

(4) The Kuliouou WWPS does not provide treatment, but pumps wastewater from a Department Collection System to a private treatment plant (Hawaii Kai WWTP). Inclusion here is to show total volume of wastewater handled by the Department.

Table 18

History of Major Wastewater Revenue Sources

Fiscal Year Ending	Sewer Service Charges*	Wastewater Facilities Charge
1995	\$108,701,000	\$3,543,000
1996	109,765,778	1,769,950
1997	110,609,000	1,166,000
1998	111,840,586	1,027,389
1999	111,377,449	1,665,827
2000**	121,703,000	2,279,175
2001	111,554,998	1,485,629
2002	112,147,942	1,662,009
2003	111,878,243	3,868,965
2004	111,886,155	3,145,439

* Sewer Service Charge Only - Does Not Include Connection Or Lateral Installation Charges.

** Sewer Service Charge revenue converted to accrual accounting in Fiscal Year 2000.

Rates and Charges

The City has recently adopted the Rate Ordinance, which provides for immediate increases in wastewater rates and future rate adjustments over the six year period from July 1, 2005 through July 1, 2010. The schedules of rates under the Rate Ordinance is intended to allow for financial planning and projection for the Department and the City and County. Tables 19 and 20 below set forth schedules under the Rate Ordinance for residential and non-residential users, respectively.

Table 21 sets forth a schedule of Wastewater Facility Charges, effective July 1, 2005 (Ordinance No. 05-019).

Table 19

Schedule of Residential Sewer Service Charges

Effective July 1 of:

Single-family and duplex dwellings served by city water system per dwelling unit per month:		
1. Monthly base charge	2005	\$31.06
	2006	34.17
	2007	37.59
	2008	41.34
	2009	45.84
	2010	50.03
2. Monthly usage charge –First 2,000 gallons of metered water consumed.	2005	No charge
	2006	\$1.31
3. Charge per 1,000 gallons of metered water consumed over 2,000 gallons, the water consumed reduced by the water irrigation factor of 18%; provided that residential users who install and maintain a water meter for submetering nonsewer water shall not have the water consumed reduced the water irrigation factor.	2006	1.44
	2007	1.59
	2008	1.75
	2009	1.92
	2010	2.11
	2010	2.11
Single-family and duplex dwellings not served by city water system per dwelling unit per month		
	2005	\$42.06
	2006	46.27
	2007	50.90
	2008	55.99
	2009	61.58
	2010	67.74
Multiple-unit dwellings served by city water system per dwelling unit per month		
1. Monthly base charge	2005	\$21.75
	2006	23.93
	2007	26.32
	2008	28.95
	2009	31.84
	2010	35.03
2. Monthly usage charge—First 2,000 gallons of metered water consumed	2005	No charge
	2006	\$1.31
3. Charge per 1,000 gallons of metered water consumed over 2,000 gallons, the water consumed reduced by the water irrigation factor of 18%; provided that residential users who install and maintain a water meter for submetering nonsewer water shall not have the water consumed reduced by the water irrigation factor	2006	1.44
	2007	1.59
	2008	1.75
	2009	1.92
	2010	2.11
	2010	2.11

Effective July 1 of:

Multiple-unit dwellings not served by city water system per dwelling unit per month	2005	\$29.44
	2006	32.38
	2007	35.62
	2008	39.18
	2009	43.10
	2010	47.41

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Table 20

Schedule of Non-Residential Sewer Service Charges

**Effective July 1
of:**

Domestic Strength Wastewater:

1. Metered Water Usage:

a. If 9,000 gallons or less per month:

(1) Monthly base charge:	2005	\$27.94
	2006	30.73
	2007	33.80
	2008	37.18
	2009	40.90
	2010	44.99

(2) Charge per 1,000 gallons:	2005	\$0.16
	2006	0.18
	2007	0.20
	2008	0.22
	2009	0.24
	2010	0.26

2. Metered Wastewater Discharge:

a. If 7,000 gallons or less per month:

(1) Monthly base charge:	2005	\$27.94
	2006	30.73
	2007	33.80
	2008	37.18
	2009	40.90
	2010	44.99

(2) Charge per 1,000 gallons:	2005	\$0.20
	2006	0.22
	2007	0.24
	2008	0.27
	2009	0.29
	2010	0.32

b. If more than 7,000 gallons per month,
charge per 1,000 gallons

2005	\$3.90
2006	4.29
2007	4.72
2008	5.19
2009	5.71
2010	6.28

**Effective July 1
of:**

Extra Strength Wastewater

1. Charge per 1,000 gallons of water usage:	2005	\$3.11
use the following formula:	2006	3.42
	2007	3.77
$0.857 + 0.143(\text{SSm}/200)$ multiplied by	2008	4.14
applicable rate	2009	4.56
	2010	5.01
2. Charge per 1,000 gallons of wastewater	2005	\$3.90
discharge, use the following formula:	2006	4.29
	2007	4.72
$0.857 + 0.143(\text{SSm}/200)$ multiplied by	2008	5.19
applicable rate	2009	5.71
	2010	6.28

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Table 21

Schedule of Wastewater Facility Charges

- (1) Residential wastewater system facility charge per ESDU:

Fiscal Year	Amount (dollars)
2004/05	\$4,641
2005/06	\$4,780
2006/07	\$4,923
2007/08	\$5,071
2008/09	\$5,223
2009/10	\$5,380
2010/11	\$5,541

- (2) Low-income housing wastewater system facility charges per ESDU:

Amount (dollars)

\$1,146

- (3) Nonresidential wastewater system facility charge for domestic strength wastewater per ESDU:

<u>Fiscal Year</u>	<u>Amount (dollars)</u>
2004/05	\$4,641
2005/06	\$4,780
2006/07	\$4,923
2007/08	\$5,071
2008/09	\$5,223
2009/10	\$5,380
2010/11	\$5,541

- (4) Nonresidential wastewater system facility charge for extra-strength wastewater per ESDU based on the following formula:

$$\text{Wastewater System Facility Charge for extra-strength wastewater} = A + ((SSi/200) \times B)$$

where SSi = the imputed suspended solids loading, in mg/L and applicable values for terms "A" and "B" are set forth as follows:

<u>Fiscal Year</u>	<u>Terms in Extra-Strength Surcharge Formula (dollars)</u>	
	A	B
2004/05	\$3,989	\$652
2005/06	4,108	672
2006/07	4,231	692
2007/08	4,358	713
2008/09	4,489	734
2009/10	4,624	756
2010/11	4,763	778

Each fiscal year, the council shall review the wastewater system facility charge to determine if it remains appropriate or should be revised.”

DEBT AND FINANCIAL POLICIES AND INDEBTEDNESS

General

The City Council, by resolution adopted on November 10, 1998, established the Debt and Financial Policies for the Wastewater System to provide a general framework for the conduct of financial activities and has been in compliance with such policies since their adoption. Such Debt and Financial Policies specify, among other things, that the City and County will target to maintain revenues (excluding Wastewater System Facility Charges) of 1.60 times senior revenue bond debt service and 1.25 times debt service for all revenue bonds, regardless of the priority of lien. It is expected that the City and County will adopt increases in the sewer service charges necessary to meet the debt service coverage requirements prescribed in its debt and financial policies. The debt and financial policies do not constitute an agreement with holders of Bonds, and the City and County has not undertaken any obligation to such holders or any other person to comply with such policies or to meet such targets.

Since establishment of these policies in November 1998, the Wastewater Enterprise has consistently met or exceeded all policy requirements.

Indebtedness

Table 22 sets forth the outstanding revenue bonds of the City and County secured by the Net Revenues under the Bond Resolution and the Second Resolution; and Table 23 sets forth the debt service requirements for such revenue bonds.

Table 22

Outstanding Wastewater Revenue Bonds

<u>Bonds</u>	<u>Original Issue Amount</u>	<u>Bonds</u>	<u>Amount Outstanding as of July 1, 2005</u>
<u>Senior Bonds</u>			
1998 Senior Bonds	\$ 55,000,000	<u>Outstanding Senior Bonds</u> 1998 Senior Bonds	\$ 51,005,000
2001 Senior Bonds	136,020,000	2001 Senior Bonds	<u>136,020,000</u>
		Total	\$187,025,000
<u>Junior Bonds</u>			
Junior Series 1998 Bonds ⁽¹⁾	\$264,152,890	<u>Outstanding Junior Bonds</u> Junior Series 1998 Bonds ⁽¹⁾	\$264,152,890
Junior Series 2003 Bonds	218,400,000	Junior Series 2003 Bonds	<u>218,400,000</u>
		Total	\$482,552,890

⁽¹⁾ Used to refund certain reimbursable general obligation bonds of the City and County issued to finance the wastewater system of the City and County.

In addition, as of July 1, 2005, \$132,569,964 principal amount of Subordinate Obligations (other than Junior Bonds) and Reimbursable Obligations were outstanding. Subordinate Obligations include Junior Bonds and State Revolving Fund loans, and do not include Reimbursable Obligations.

Table 23
Revenue Bond Debt Service Requirements
 Years Ending June 30⁽¹⁾

Year	Principal Series 2005 Bonds	Interest Series 2005 Bonds ⁽²⁾	Total Series 2005 Debt Service ⁽²⁾	Debt Service on Senior Bonds ⁽²⁾	Total Senior Debt Service ⁽²⁾	Debt Service on Outstanding Junior Bonds ^{(2), (3)}	Total Debt Service ⁽²⁾
2006	--	\$ 10,162,929	\$10,162,929	\$ 12,945,606	\$ 12,945,606	\$ 22,620,913	\$ 35,566,519
2007	--	7,302,704	7,302,704	12,948,581	23,111,511	22,620,913	45,732,423
2008	--	7,302,704	7,302,704	12,948,931	20,251,635	27,394,689	47,646,324
2009	--	7,302,704	7,302,704	12,947,822	20,250,526	28,220,606	48,471,131
2010	--	7,302,704	7,302,704	12,945,663	20,248,366	29,961,403	50,209,770
2011	\$ 3,175,000	7,250,404	10,425,404	12,947,163	23,372,566	32,635,434	56,008,000
2012	3,285,000	7,143,901	10,428,901	12,944,363	23,373,264	36,982,296	60,355,559
2013	3,395,000	7,031,984	10,426,984	12,945,813	23,372,796	38,557,308	61,930,105
2014	3,515,000	6,912,756	10,427,756	12,945,219	23,372,975	38,446,434	61,819,409
2015	3,645,000	6,783,303	10,428,303	12,947,013	23,375,316	38,426,386	61,801,702
2016	3,785,000	6,644,394	10,429,394	12,943,494	23,372,888	38,290,866	61,663,753
2017	3,950,000	6,474,675	10,424,675	12,943,856	23,368,531	38,244,404	61,612,936
2018	4,155,000	6,272,050	10,427,050	12,947,056	23,374,106	38,181,940	61,556,046
2019	4,370,000	6,058,925	10,428,925	12,947,169	23,376,094	38,103,900	61,479,994
2020	4,590,000	5,834,925	10,424,925	12,949,538	23,374,463	38,004,481	61,378,944
2021	4,825,000	5,604,500	10,429,500	12,948,844	23,378,344	37,897,515	61,275,859
2022	5,065,000	5,362,200	10,427,200	12,948,500	23,375,700	37,767,065	61,142,765
2023	5,325,000	5,102,450	10,427,450	12,947,481	23,374,931	37,723,911	61,098,842
2024	5,600,000	4,829,325	10,429,325	12,949,644	23,378,969	37,560,393	60,939,362
2025	5,885,000	4,542,200	10,427,200	12,943,088	23,370,288	37,482,958	60,853,245
2026	6,180,000	4,247,375	10,427,375	12,942,128	23,369,503	37,379,443	60,748,946
2027	6,490,000	3,937,763	10,427,763	12,946,600	23,374,363	37,256,564	60,630,926
2028	6,820,000	3,605,706	10,425,706	12,950,122	23,375,828	37,116,732	60,492,560
2029	7,170,000	3,256,688	10,426,688	12,946,559	23,373,247	37,051,255	60,424,501
2030	7,535,000	2,889,850	10,424,850	9,386,219	19,811,069	13,943,388	33,754,457
2031	7,920,000	2,504,319	10,424,319	9,386,747	19,811,066	13,832,638	33,643,704
2032	8,330,000	2,098,500	10,428,500	9,384,469	19,812,969	13,696,338	33,509,307
2033	8,755,000	1,671,375	10,426,375	--	10,426,375	13,535,417	23,961,792
2034	9,205,000	1,222,375	10,427,375	--	10,427,375	--	10,427,375
2035	9,675,000	750,375	10,425,375	--	10,425,375	--	10,425,375
2036	10,170,000	254,250	10,424,250	--	10,424,250	--	10,424,250
Total	\$152,815,000	\$150,357,608	\$303,172,608	\$338,877,684	\$642,050,292	\$898,935,586	\$1,540,985,878

(1) Based on payments, not on accruals.

(2) Totals may not add due to rounding.

(3) Assumes interest at an average rate of 4% per annum on Junior Series 2003A-1, Series 2003A-2, 2003B-1 and 2003B-2 auction rate certificates.

FINANCIAL STATEMENTS

The operations of the Department are accounted for in the Sewer Fund and the Wastewater System Facility Charge Account. The Sewer Fund is classified as an enterprise fund of the City and County and is currently audited as a part of the City and County's general purpose financial statements that are prepared annually.

The financial statements of the City and County as of June 30, 2004, including information relating to the Sewer Fund, together with the auditor's report thereon delivered by PricewaterhouseCoopers LLP, may be found at the Website of the City and County at <http://www.co.honolulu.gov/budget/cafr.htm>, or may be obtained from the Department by request to the attention of the Director of Budget and Fiscal Services, City and County of Honolulu, 530 South King Street, Honolulu, Hawaii 96813. PricewaterhouseCoopers LLP has not reviewed and has no responsibility with respect to this Official Statement.

The following tables have been extracted from both unaudited and audited financial statements of the City and County relating to the Department. It should be noted that "Revenues" as defined in the First Bond Resolution does not include Wastewater System Facility Charges.

Table 24 summarizes revenues and expenses and Table 25 provides fund balances, both reflecting enterprise accounting and consistency with GASB 34 reporting requirements.

Table 24

**Department of Environmental Services
Sewer Fund
Enterprise Fund Statement of Revenues, Expenses and Charges in Retained Earnings (Deficit)
(AMOUNTS IN THOUSANDS)**

	2001/2002	2002/2003	2003/2004
Operating Revenues:			
Sewer Service Charges	\$112,148	\$111,878	\$111,886
Other Revenue	<u>1,662</u>	<u>3,869</u>	<u>3,146</u>
Total Operating Revenues	113,810	115,747	115,032
Operating Expenses:			
Administrative and general	32,943	29,502	20,990
Maintenance	226	233	192
Depreciation	29,983	30,290	30,575
Contractual services	6,665	7,571	8,231
Fringe benefits	10,676	8,711	10,348
Materials and supplies	3,850	4,857	5,336
Fuel and lubricants	1,641	1,695	1,654
Utilities	<u>6,754</u>	<u>7,426</u>	<u>7,585</u>
Total Operating Expenses	<u>92,738</u>	<u>90,285</u>	<u>93,911</u>
Operating Income	21,072	25,462	21,121
Nonoperating Revenues (Expenses):			
Interest income	4,779	2,032	1,540
Interest expense	(18,208)	(35,354)	(26,573)
Other	<u>(1,753)</u>	<u>(4,521)</u>	<u>(3,168)</u>
Total Nonoperating Expenses	(15,182)	(37,843)	(28,202)
Income before operating transfers and contributed capital	5,890	(12,381)	(7,081)
Operating Transfers Out	(46,995)	(59,633)	(31,077)
Contributed Capital	<u>2,066</u>	<u>1,006</u>	<u>1,443</u>
Change in Net Assets	(39,039)	(71,008)	(36,716)
Net Assets at Beginning of Year, as previously reported			
Prior period adjustment			
Net Assets at Beginning of Year, as restated	818,419	779,381	708,373
Net Assets at End of Year	779,381	708,373	671,657

Table 25
Department of Environmental Services
Sewer Fund
Enterprise Fund Balance Sheet
(AMOUNTS IN THOUSANDS)

	2001/2002	2002/2003	2003/2004
ASSETS			
Current Assets:			
Cash and cash equivalents	\$ 25,073	\$ 115,546	\$ 59,971
Investments	142,946	98,632	63,673
Receivables			
Accounts	16,772	16,336	15,658
Interest	985	431	199
Due from other funds	6,859	25,627	4,885
Inventories of parts, materials and supplies at cost	<u>4,710</u>	<u>4,423</u>	<u>4,711</u>
Total Current Assets	197,345	260,995	149,097
Fixed Assets:			
Land	5,630	5,841	5,856
Land improvements	2,552	3,675	--
Buildings and Improvements	394,423	436,653	441,618
Transmission and distribution system	787,519	793,268	794,390
Equipment and machinery	19,963	21,787	24,384
Construction work in progress	109,690	168,996	262,113
Accumulated depreciation	<u>(84,656)</u>	<u>(114,858)</u>	<u>(143,975)</u>
Total Assets	\$1,432,466	\$1,576,357	\$1,533,483
LIABILITIES AND FUND EQUITY (DEFICIENCY)			
Current Liabilities:			
Accounts payable	5,984	18,167	17,391
Interest payable-current	8,127	11,712	11,438
Notes payable-current	5,408	5,619	5,756
Bonds payable-current	10,906	10,871	10,832
Tax-exempt commercial paper	10,183	0	10,022
Other current liabilities	<u>488</u>	<u>808</u>	<u>837</u>
Total Current Liabilities	41,096	47,177	56,276
Notes payable	85,003	79,877	74,124
General obligation bonds payable	67,644	57,953	48,344
Revenue bonds payable	453,413	677,159	677,652
Deferred credits and other liabilities	<u>5,929</u>	<u>5,818</u>	<u>5,430</u>
Total Liabilities	653,085	867,984	861,827
Commitments and Contingencies Net Assets:			
Invested in capital assets	650,381	625,114	638,114
Reserved for debt service	54,489	20,603	22,584
Unrestricted	<u>74,510</u>	<u>62,656</u>	<u>10,959</u>
Total net assets	779,381	708,373	671,657

The Bond Resolution requires the Department to maintain and keep proper books of account relating to the Wastewater System and in accordance with generally accepted accounting principles. The Bond Resolution also requires that within one hundred eighty (180) days after the end of each Fiscal Year the Department will cause such books of account to be audited by an independent certified public accountant. Such audit may be part of a comprehensive audit of the City and County if the Wastewater System in such audit is treated as an "enterprise fund" and the revenues and expenses of the Wastewater System are stated in a manner which permits identification by category of the sources and uses of the Revenues.

PENDING LITIGATION

In the normal course of business, claims and lawsuits are filed against the City and County and the Department and their respective officers and employees. The City and County and the Department generally are self-insured with respect to general liability claims. In the Fiscal Years ended June 30, 2002, June 30, 2003, and June 30, 2004, the Department has reached lawsuit settlements with claimants totaling \$283,290, \$460,748 and \$315,168, respectively. There were no judgments chargeable against the Department during such period. Except as set forth below, the City and County's Corporation Counsel is of the opinion that no pending litigation will be determined so as to result individually or in the aggregate in a final judgment against the Department which would constitute a material impairment of the Department's financial position.

A lawsuit filed against the City and County in July 2004 by the Sierra Club and other environmental groups seeks enforcement of the City and County's 1995 consent decree with the EPA and penalties for alleged violations as a result of sewage spills and alleged permit violations pertaining to certain wastewater treatment plants. Since the litigation is presently in the early preliminary motion and discovery phases, the cost of any potential liability for alleged violations or penalties beyond the City's approximate \$2.1 billion CIP to upgrade its collection systems and wastewater treatment plants, is speculative.

The Corporation Counsel reports that there is no controversy or litigation now pending or, to the best of the City and County's and the Department's knowledge, threatened, which seeks to restrain or enjoin the execution, issuance, sale or delivery of the Series 2005 Bonds or that in any way contests the validity of the Series 2005 Bonds; or any proceedings of the City and County taken with respect to the authorization, sale, or issuance of the Series 2005 Bonds, the pledge or application of any moneys provided for the payment of or security for the Series 2005 Bonds.

RATINGS

Fitch, Inc., Moody's Investors Service and Standard & Poor's Ratings Group, a division of the McGraw Hill Companies, Inc., have assigned ratings of "AAA," "Aaa" and "AAA", respectively, to the Series 2005 Bonds with the understanding that upon delivery of the Series 2005 Bonds, the Policy insuring the payment of the principal of and interest on the Series 2005 Bonds will be issued by the Bond Insurer. Such ratings reflect only the respective views of such organizations, and an explanation of the significance of such ratings may be obtained from the rating agency furnishing the same, at the following addresses: Fitch, Inc., One State Street Plaza, New York, New York 10004, Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007 and Standard & Poor's Ratings Group, 55 Water Street, New York, New York 10041. There is no assurance that such ratings will continue for any given period of time or that they will not be revised or withdrawn entirely by such rating agencies, if in the judgment of such rating agencies, circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an effect on the market price of the Series 2005 Bonds.

UNDERWRITING

The Series 2005 Bonds are being purchased for reoffering by the Underwriters. The Underwriters have agreed to purchase the Series 2005 Bonds at an aggregate purchase price of \$159,738,663.36, being an amount equal to the principal amount of the Series 2005 Bonds, less an underwriting discount of \$1,157,041.39, plus a net original issue premium of \$8,080,704.75. The contract of purchase with respect to the Series 2005 Bonds provides that the Underwriters will purchase all the Series 2005 Bonds if any are purchased. The initial public offering prices are set forth on the inside cover page of this Official Statement. The Underwriters may offer and sell the Series 2005 Bonds to certain dealers (including depositing the Series 2005 Bonds into investment trusts) and others at prices lower than the initial public offering prices stated on the cover page hereof. The public offering prices may be changed from time to time by the Underwriters.

TAX MATTERS

In the opinion of Orrick, Herrington & Sutcliffe LLP, Bond Counsel, based upon an analysis of existing laws, regulations, rulings, and court decisions, and assuming, among other matters, the accuracy of certain

representations and compliance with certain covenants, interest on the Series 2005 Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 (the “Code”), and the Series 2005 Bonds and the income therefrom are exempt from all taxation by the State or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Bond Counsel is of the further opinion that interest on the Series 2005 Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Bond Counsel observes that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. A complete copy of the proposed form of the opinion of Bond Counsel for the Series 2005 Bonds is set forth in Appendix D hereto.

To the extent the issue price of any maturity of the Series 2005 Bonds is less than the amount to be paid at maturity of such Series 2005 Bonds (excluding amounts stated to be interest and payable at least annually over the term of such Series 2005 Bonds), the difference constitutes “original issue discount,” the accrual of which, to the extent properly allocable to each owner thereof, is treated as interest on the Series 2005 Bonds which is excluded from gross income for federal income tax purposes and State of Hawaii tax purposes. For this purpose, the issue price of a particular maturity of the Series 2005 Bonds is the first price at which a substantial amount of such maturity of the Series 2005 Bonds is sold to the public (excluding bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The original issue discount with respect to any maturity of the Series 2005 Bonds accrues daily over the term to maturity of such Series 2005 Bonds on the basis of a constant interest rate compounded semiannually (with straight-line interpolations between compounding dates). The accruing original issue discount is added to the adjusted basis of such Series 2005 Bonds to determine taxable gain or loss upon disposition (including sale, redemption, or payment on maturity) of such Series 2005 Bonds. Owners of the Series 2005 Bonds should consult their own tax advisors with respect to the tax consequences of ownership of the Series 2005 Bonds with original issue discount, including the treatment of purchasers who do not purchase such Series 2005 Bonds in the original offering to the public at the first price at which a substantial amount of such Series 2005 Bonds is sold to the public.

Series 2005 Bonds purchased, whether at original issuance or otherwise, for an amount greater than their principal amount payable at maturity (or, in some cases, at their earlier call date) (“Premium Bonds”) will be treated as having amortizable bond premium. No deduction is allowable for the amortizable bond premium in the case of bonds, like the Premium Bonds, the interest on which is excluded from gross income for federal income tax purposes. However, the amount of tax-exempt interest received, and a purchaser’s basis in a Premium Bond, will be reduced by the amount of amortizable bond premium allocable to such purchaser. Owners of Premium Bonds should consult their own tax advisors with respect to the proper treatment of amortizable bond premium in their particular circumstances.

The Code imposes various restrictions, conditions and requirements relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the Series 2005 Bonds. The City and County has made certain representations and covenanted to comply with certain restrictions designed to insure that interest on the Series 2005 Bonds will not be included in federal gross income. Inaccuracy of these representations or failure to comply with these covenants may result in interest on the Series 2005 Bonds being included in gross income for federal income tax purposes, possibly from the date of original issuance of the Series 2005 Bonds. The opinion of Bond Counsel assumes the accuracy of these representations and compliance with these covenants. Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) or any other matters coming to Bond Counsel’s attention after the date of issuance of the Series 2005 Bonds may adversely affect the value of, or the tax status of interest on, the Series 2005 Bonds.

Certain requirements and procedures contained or referred to in the Resolution, the Series 2005 Certificate, the Tax Certificate relating to the Series 2005 Bonds, and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Series 2005 Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Bond Counsel expresses no opinion as to any Series 2005 Bonds or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of counsel other than Orrick, Herrington & Sutcliffe LLP.

Although Bond Counsel is of the opinion that interest on the Series 2005 Bonds is excluded from gross income for federal income tax purposes and that the Series 2005 Bonds and the income therefrom are exempt from

taxation by the State or any political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes, the ownership or disposition of, or the accrual or receipt of interest on, the Series 2005 Bonds may otherwise affect a Bondholder's federal or state tax liability. The nature and extent of these other tax consequences will depend upon the particular tax status of the Bondholder or the Bondholder's other items of income or deduction. Bond Counsel expresses no opinion regarding any such other tax consequences.

Future legislation, if enacted into law, or clarification of the Code may cause interest on the Series 2005 Bonds to be subject, directly or indirectly, to federal income taxation, or otherwise prevent Bondholders from realizing the full current benefit of the tax status of such interest. The introduction or enactment of any such future legislation or clarification of the Code may also affect the market price for, or marketability of, the Series 2005 Bonds. Prospective purchasers of the Series 2005 Bonds should consult their own tax advisers regarding any pending or proposed federal tax legislation, as to which Bond Counsel expresses no opinion.

The opinion of Bond Counsel is based on current legal authority, covers certain matters not directly addressed by such authorities, and represents Bond Counsel's judgment as to the proper treatment of the Series 2005 Bonds for federal income tax purposes. It is not binding on the Internal Revenue Service ("IRS") or the courts. Furthermore, Bond Counsel cannot give and has not given any opinion or assurance about the future activities of the City and County, or about the effect of future changes in the Code, the applicable regulations, the interpretation thereof or the enforcement thereof by the IRS. The City and County has covenanted, however, to comply with the requirements of the Code.

Bond Counsel's engagement with respect to the Series 2005 Bonds ends with the issuance of the Series 2005 Bonds, and, unless separately engaged, Bond Counsel is not obligated to defend the City and County or the Bondholders regarding the tax-exempt status of the Series 2005 Bonds in the event of an audit examination by the IRS. Under current procedures, parties other than the City and County and its appointed counsel, including the Bondholders, would have little, if any, right to participate in the audit examination process. Moreover, because achieving judicial review in connection with an audit examination of tax-exempt bonds is difficult, obtaining an independent review of IRS positions with which the City and County legitimately disagrees, may not be practicable. Any action of the IRS, including but not limited to selection of the Series 2005 Bonds for audit, or the course or result of such audit, or an audit of bonds presenting similar tax issues may affect the market price for, or the marketability of, the Series 2005 Bonds, and may cause the City and County or the Bondholders to incur significant expense.

APPROVAL OF LEGAL PROCEEDINGS

All legal matters incident to the authorization, issuance and sale of the Series 2005 Bonds are subject to the approval of Orrick, Herrington & Sutcliffe LLP, San Francisco, California, Bond Counsel to the City and County. The form of the opinion Bond Counsel proposes to render is set forth in Appendix E hereto. Copies of the approving opinion of Bond Counsel will be available at the time of delivery of the Series 2005 Bonds. Bond Counsel undertakes no responsibility for the accuracy, completeness or fairness of this Official Statement. Certain legal matters will be passed upon for the Underwriters by their counsel, McCorriston Miller Mukai MacKinnon LLP, Honolulu, Hawaii.

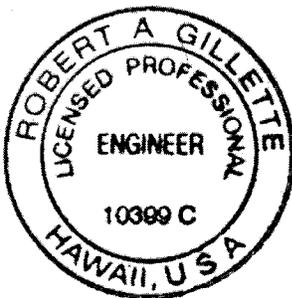
CONTINUING DISCLOSURE

In order to assist the Underwriters in complying with Rule 15c2-12 promulgated by the Securities and Exchange Commission ("Rule 15c2-12"), the City and County will undertake in a Master Continuing Disclosure Certificate of the City and County, as supplemented, constituting a written agreement for the benefit of the holders of the Series 2005 Bonds (the "Continuing Disclosure Certificate"), to provide to each Nationally Recognized Municipal Securities Information Repository (as referred to in Rule 15c2-12) and others, on an annual basis, certain financial and operating data concerning the Department, financial statements, notice of certain events if material, and certain other notices, all as described in the Continuing Disclosure Certificate. The undertaking is an obligation of the Department that is enforceable as described in the Continuing Disclosure Certificate. Beneficial Owners of the Series 2005 Bonds are third party beneficiaries of the Continuing Disclosure Certificate. The execution of the Continuing Disclosure Certificate is a condition precedent to the obligation of the Underwriters to purchase the Series 2005 Bonds. The form of the Master Continuing Disclosure Certificate and the proposed form of the Series

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Appendix A
Engineer's Report

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City and County of Honolulu
2005 WASTEWATER SYSTEM REVENUE BONDS
ENGINEER'S REPORT

July 25, 2005

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.


Signature



City and County of Honolulu
2005 WASTEWATER SYSTEM REVENUE BONDS
ENGINEER'S REPORT

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INTRODUCTION AND BACKGROUND

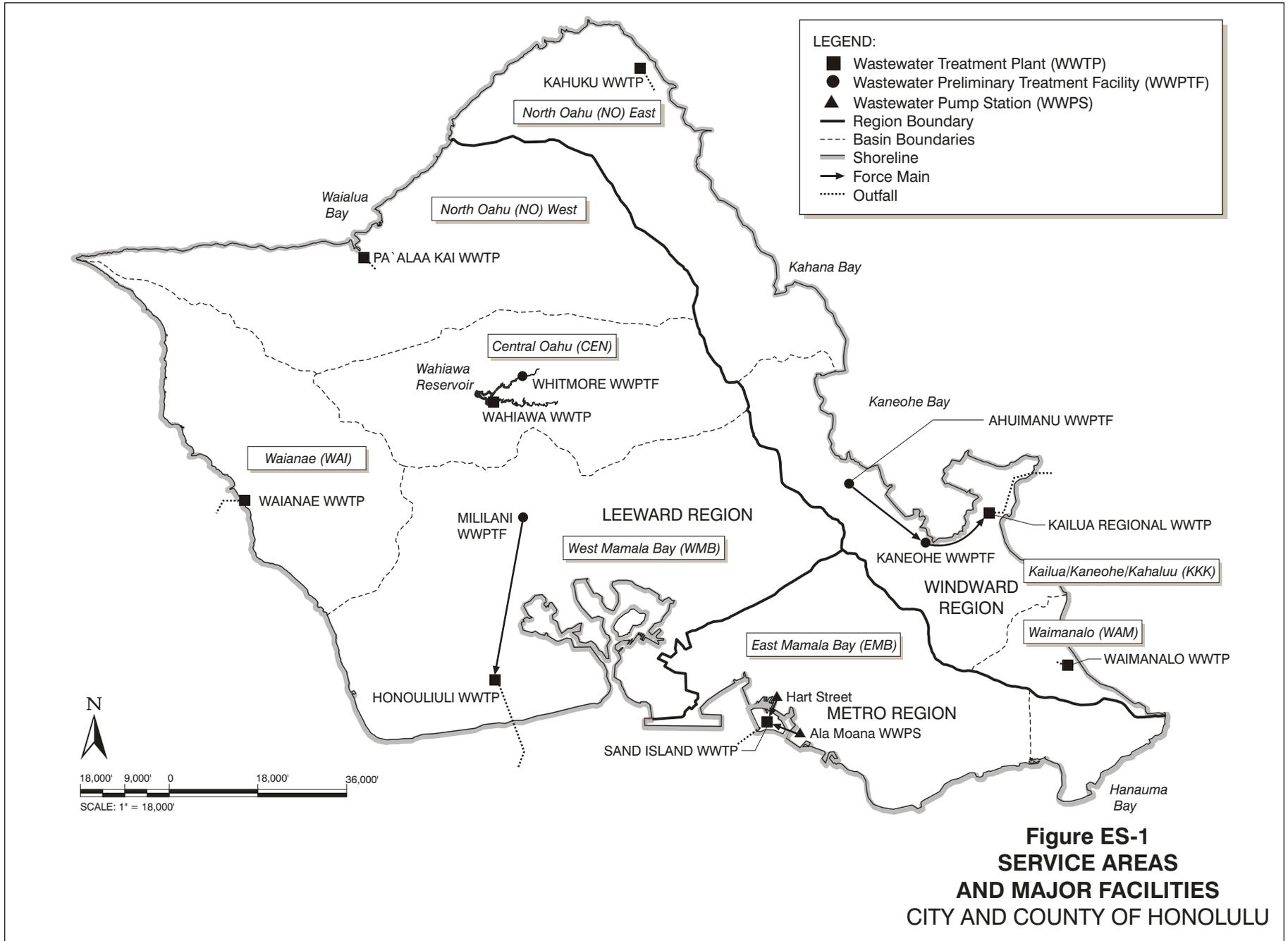
Overview of Existing Wastewater Facilities

The City and County of Honolulu’s Department of Environmental Services (“Department”) is responsible for the operation, maintenance, compliance monitoring, facility planning and programming, and fiscal planning and execution for the City’s wastewater system.

The wastewater system services approximately 150,000 separate accounts and a population of approximately 640,000, or 71 percent of the island of Oahu’s total population. The customer base includes the residential population, businesses and industries, and other users located in the 600-square-mile service area. Out of 150,000 accounts, approximately 140,000 are residential and represent approximately 78 percent of the total revenue from sewer service charges. The remaining 10,000 are non-residential and represent approximately 22 percent of the total revenue from sewer service charges. The average total volume of wastewater processed by the City and County’s wastewater system was 122 million gallons per day (mgd) average day annual flow (ADAF).

The island of Oahu, which constitutes the City and County of Honolulu, is divided into eight wastewater basins: Central Oahu, East Mamala Bay, Kailua/Kaneohe/Kahaluu, North Oahu (East), North Oahu (West), Waianae, Waimanalo, and West Mamala Bay. Each basin is served by a major wastewater treatment plant (WWTP). The basins and the associated WWTPs are shown in Figure ES.1 and listed in Table ES.1.

Table ES.1 Wastewater Drainage Basins and Major Facilities 2005 Wastewater System Revenue Bonds Engineer’s Report City and County of Honolulu			
Region	Basin	Wastewater Treatment Plant	Discharge Location
Metro	• East Mamala Bay	• Sand Island	• Ocean
Leeward	• West Mamala Bay • North Oahu (West) • Waianae • Central Oahu	• Honouliuli • Pa’alaa Kai • Waianae • Wahiawa	• Ocean/Reuse • Injection Wells • Ocean • Reservoir
Windward	• Kailua/Kaneohe/Kahaluu • North Oahu (East) • Waimanalo	• Kailua Regional • Kahuku • Waimanalo	• Ocean • Injection Wells • Injection Wells



Almost 95 percent of the wastewater flows are treated by the three largest facilities: the Sand Island WWTP, which treats 72.7 mgd of average day annual flow (ADAF) from Honolulu, the Honouliuli WWTP, which treats 27.2 mgd ADAF from the Ewa, Mililani, and Pearl Harbor areas, and the Kailua Regional WWTP, which treats 15.4 mgd ADAF from the eastern populated areas of the island.

Organization of the City and County of Honolulu Wastewater Enterprise

The City and County of Honolulu's Department of Environmental Services is responsible for the operation, maintenance, compliance monitoring, facility planning and programming, for the City's wastewater system.

The Department is composed of approximately 700 employees in support of the wastewater program. The Office of Administrative Support provides fiscal control, personnel support, asset management, and Capital Improvement Plan (CIP) program development activities. The Division of Wastewater Treatment and Disposal and the Division of Collection System Maintenance provide operation and maintenance of the treatment plants, pump stations, and the collection system. The Division of Environmental Quality provides performance monitoring, source control, and laboratory services. An additional 400 employees support the solid waste collection and disposal program.

The Department of Environmental Services was created July 1, 1998 as part of a City-wide reorganization to streamline operations. Previously, the Department of Wastewater Management, created by a City Charter change effective July 1, 1993, provided operation, maintenance, planning, design, and construction of City wastewater facilities. Prior to that time, wastewater management was a division under the Department of Public Works. The City's Department of Design and Construction provides wastewater facility planning, design and construction in support of the Department. Wastewater permitting is consolidated in the City's Department of Planning and Permitting to provide one-stop permitting service to customers and better relate approval of development plans with City-wide planning.

Consulting Engineer

Carollo Engineers, P.C. (Carollo) is familiar with the City and County of Honolulu's wastewater facilities through previous studies and evaluations. Carollo Engineers recently completed a Wastewater Asset Evaluation and Condition Assessment as part of the City and County's Wastewater Asset Management Program. Carollo has also performed an Operations and Maintenance Evaluation of the Sand Island Wastewater Treatment Plant (WWTP) to assess overall effectiveness and efficiency. Carollo has also completed several projects for the City and County of Honolulu, including the 1998 and 2001 Wastewater System Revenue Bonds Engineering Reports, and various projects, in conjunction with R. M. Towill Corporation.

CAPITAL PROGRAM PLANNING AND FUTURE DIRECTION

The Department has developed a comprehensive long-term planning program for the wastewater program which has led to the completion of facility plans and preliminary designs for most of the major wastewater facilities on the island. The facility plans for the individual WWTPs are incorporated in the 20-year CIP which covers the years ranging from FYE 1998 to FYE 2017.

The Department retains the responsibility for insuring that appropriate planning for the future continues as the program is executed, modified, and planned beyond the 20-year period.

Capital costs described within this report, unless specifically mentioned otherwise, reflect capital appropriations rather than capital expenditures. While actual expenditures can vary on an annual basis, appropriations represent a commitment by the City and County of Honolulu to undertake the necessary capital projects in order to meet environmental projection objectives and level-of-service goals over the 20-year planning period. Projected annual expenditures are incorporated within the cash flow analysis in order to evaluate the Utility's ability to meet annual expenditure needs and debt service coverage requirements.

Wastewater Flow Projections

The wastewater flow and strength projections are based on the anticipated growth rates included in the City and County of Honolulu's Development Plans and Sustainable Community Plans. Growth is not a significant factor in driving the overall need for 20-year CIP projects. Only 20 percent of the 20-year CIP costs are associated with projects that are required to accommodate growth.

Compliance with Discharge Requirements

Many of the completed or work-in-progress projects, have been undertaken to comply with consent decree or permit requirements.

Seven out of the eight WWTPs are owned by the City and County of Honolulu, and operated by the Department. All City and County-owned WWTPs currently meet national and state discharge requirements except for the Sand Island WWTP. The Sand Island WWTP experienced some difficulties in 2003 in meeting the 30 percent average biological oxygen demand (BOD) and 60 percent average total suspended solids (TSS) removal efficiency requirement in the discharge permit. Many of the ongoing and upcoming projects are designed to fix problems at this facility. The eighth WWTP, the Waimanalo WWTP, which accounted for only 0.5 percent of the total wastewater flows in the year 2000, is owned by the State of Hawaii and operated by the Department.

The community of Honolulu highly values a clean environment. The Department has worked with the community, the EPA, and the State of Hawaii Department of Health to

develop several consent decrees. The consent decrees reflect agreed upon actions to meet the objectives of the City and County of Honolulu, the EPA, and other major participants for improvements to the existing wastewater systems. The consent decrees confirm the overall direction and schedule for the wastewater program.

1998 - 2005 CIP Projects

Several significant projects, identified in the 1998-2017 CIP, have been completed or are in the final stages of construction. A total of \$738.5 million has been appropriated between fiscal years ending 1998-2005 towards collection and treatment projects, including upgrades and rehabilitation of collection system sewers, pump stations, and improvements to wastewater treatment facilities. These major projects have been undertaken to comply with consent decree and discharge permit requirements, as well as for health and safety, improvements, reliability, and expansion to accommodate planned growth.

The 2005 CIP projects are currently in progress, and total \$92,542,000 for treatment plant improvements, and \$18,672,000 for collection system improvements, for a total appropriation, including \$9,633,000 for project management and equipment, of \$120,847,000. Table ES.2 summarizes the appropriations for CIP projects in 1998-2005.

Table ES.2 Summary of CIP Project Appropriations, 1998-2005									
2005 Wastewater System Revenue Bonds Engineer's Report									
City and County of Honolulu									
Project	(Thousands of Dollars)								
	Fiscal Year Ending								Total
	1998	1999	2000	2001	2002	2003	2004	2005	Appropriations
									1998-2005
Collection System Projects	\$38,050	\$12,275	\$43,671	\$56,281	\$64,047	\$98,114	\$25,524	\$18,672	\$356,635
Treatment Plant Projects	\$12,766	\$15,157	\$9,337	\$31,958	\$105,965	\$37,059	\$35,598	\$92,542	\$340,381
Project Management and Equipment	\$0	\$0	\$3,355	\$6,136	\$6,757	\$7,798	\$7,801	\$9,633	\$41,480
Total CIP	\$50,816	\$27,432	\$56,363	\$94,375	\$176,769	\$142,971	\$68,923	\$120,847	\$738,496

2006 - 2010 CIP PROJECTS

Need for the 2006-2010 Projects

The 2006-2010 CIP projects which are part of the overall 20-year program fall into two general categories: collection system improvements and wastewater treatment plant facility improvements. The total appropriations from 2006 through 2010 for these two categories and project management and equipment are \$756.9 million. The need for projects in each category is summarized below.

Collection System Improvement Projects

Collection system improvement projects are the highest priority projects due to deteriorated and corroded pipe conditions that have resulted in excessive infiltration, inflow, and overflows during wet weather conditions. Replacement of severely corroded pipe will reduce infiltration/inflow during wet weather events, will result in lower operation and maintenance costs for both the collection systems and associated WWTPs, and will significantly reduce the risk of Clean Water Act violations owing to system overflows resulting from infiltration/inflow.

The Department has planned for the design or construction of numerous collection system improvement projects between fiscal years ending 2006 and 2010. The large number of collection system improvement projects are largely a result of a comprehensive Infiltration/Inflow (I/I) plan completed in December 1999 and approved by EPA. The total appropriations for these projects through the year 2010 are \$502.8 million, with an expected \$375.2 million to be appropriated within the first three years and \$127.6 million in the remaining two years.

Collection system projects between fiscal years ending 2006 and 2010 include the Wilhelmina Rise Sewer Rehabilitation, the Kalaheo Avenue Sewer Reconstruction, the Kapiolani Area Sewer Reconstruction, the Saint Louis Heights Sewer Rehabilitation, the Kahili Valley Sewer Reconstruction, the Beachwalk WWPS, and many other projects including ones that stem from the I/I Plan.

Wastewater Treatment Plant Improvement Projects

The WWTP improvement projects are needed to upgrade existing facilities to satisfy regulatory requirements, to improve the ability of the facilities to handle peak wet weather flows, and in some cases to accommodate growth. The Department has planned for the design and/or construction of 21 WWTP improvement projects with all WWTP appropriations totaling approximately \$202.9 million between fiscal years ending 2006 and 2010. Within the first three years, \$136.2 million is to be appropriated and approximately \$66.7 million is to be appropriated in the remaining two years. Projects between fiscal years ending 2006-2010 include the Sand Island WWTP Unit 1 Phase 2A Project, Sand Island WWTP Primary Treatment Expansion, and Honouliuli WWTP Solids Handling System Improvements Projects.

Project Management

The Department uses a combination of professional engineering staff and specialty subcontractors to provide construction management services. In-house permanent staff is leveraged by hiring outside project staff on an as-needed basis to support project activities.

Summary of Estimated Project Costs

The summary of costs for 2006-2010 CIP projects by project category is presented in Table ES.3. These costs include planning, design, and construction costs as well as all engineering, administrative, and legal expenses. \$140 million of the City and County of Honolulu 2005 Senior Lien Revenue Bonds (referred to herein as the "Series 2005 Bonds") will partially finance the 2006-2010 CIP projects, with the balance to be primarily met from existing funds of the Department, annual revenues, State Revolving Loan (SRF) proceeds, and from the proceeds of future revenue bond issues.

Table ES.3 Summary of Estimated CIP Project Appropriations, 2006-2010 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu							
(Thousands of Dollars)							
Project	Fiscal Year Ending					Total Appropriations	
	2006	2007	2008	2009	2010	2006-08	2006-10
<u>Collection System Projects</u>							
Consent Decree / Non-Discretionary Projects	\$108,948	\$131,660	\$41,859	\$49,374	\$46,176	\$282,467	\$378,018
Discretionary Projects	38,002	27,750	27,000	32,000	0	92,752	124,752
Subtotal: Collection System	\$146,950	\$159,410	\$68,859	\$81,374	\$46,176	\$375,219	\$502,770
<u>Treatment Plant Projects</u>							
Consent Decree / Non-Discretionary Projects	\$83,232	\$34,064	\$17,681	\$21,261	\$30,001	\$134,977	\$186,239
Discretionary Projects	426	0	801	0	15,400	1,227	16,627
Subtotal: Treatment Plant	\$83,658	\$34,064	\$18,482	\$21,261	\$45,401	\$136,204	\$202,866
<u>Project Management and Equipment</u>	\$9,811	\$10,369	\$10,369	\$10,369	\$10,369	\$30,549	\$51,287
Total CIP	\$240,419	\$203,843	\$97,710	\$113,004	\$101,947	\$541,972	\$756,923
Notes:							
(1) All costs are presented in 2005 dollars.							

FUTURE PROJECTS

Long-Term Expansion and Rehabilitation Needs

A summary of the 20-year CIP total costs by project category is provided in Figure ES.2. Approximately 57 percent of the total project costs are associated with collection system improvements, and 43 percent with WWTP improvements. The 20-year expenditure total presented in figure ES.2 is in FY 2005 dollars.

A summary of the 20-year CIP total cost by primary project purpose is presented in Figure ES.3. As shown in Figure ES.3, approximately 88 percent of the total costs are

20-year appropriations total = \$2.1 Billion*

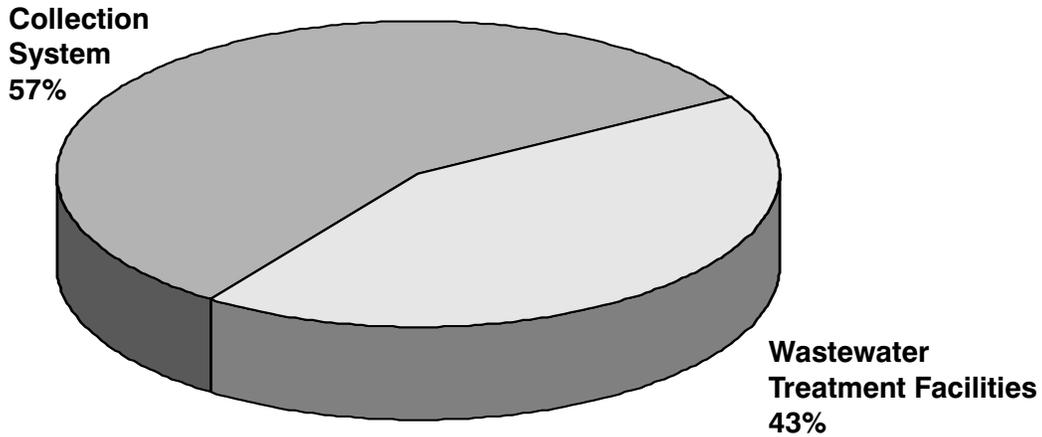
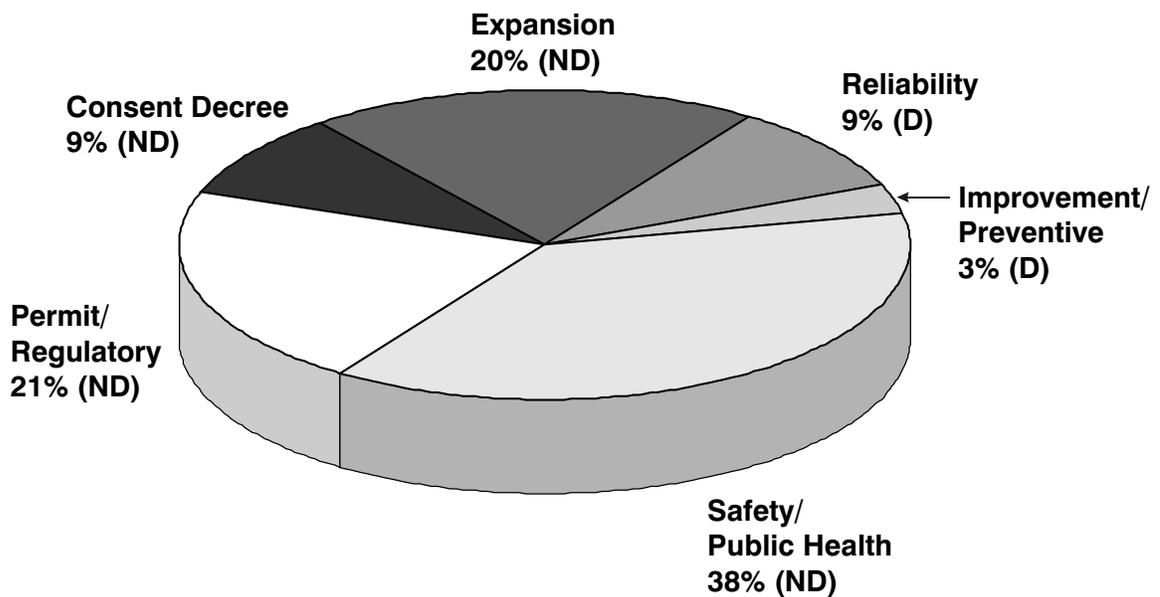


Figure ES-2
20-YEAR CIP BY PROJECT CATEGORY
 CITY AND COUNTY OF HONOLULU

20-year appropriations total = \$2.1 Billion*



D = Discretionary
ND = Non-discretionary

Figure ES-3
20-YEAR CIP BY PROJECT MAIN PURPOSE
 CITY AND COUNTY OF HONOLULU

*Appropriations reported in 2005 dollars

associated with non-discretionary projects that must be completed in order to satisfy consent decree, permit/regulatory, expansion, and safety/public health requirements. The remaining 12 percent of the total costs are associated with discretionary projects that have been identified to improve wastewater treatment and collection systems. The Department has identified these discretionary projects in order to address reliability, improvement, and preventive maintenance concerns. The 20-year appropriations total presented in Figure ES.3 is in FY 2005 dollars.

Cost of CIP Projects

Estimated capital project costs for future facilities have been developed for each of the eight wastewater basins. The capital cost estimates include land acquisition, planning, design, construction, construction management, and all other costs required to deliver a completed project.

Timing of CIP Projects

An implementation schedule for the 20-year CIP projects has been developed, which includes the timing of major CIP projects necessary to accommodate increased wastewater flows and loadings due to anticipated growth, to meet consent decree scheduled activities, and for replacement and rehabilitation needs. Some of the 2006-2010 CIP projects are already funded through planning and design and construction. Others will be funded from the proceeds of the Series 2005 Bonds, the existing capital reserves, annual revenues, SRF loan proceeds, and future bond issues.

Growth Rate Considerations

Most of the projects in the CIP are driven by factors other than growth such as consent decree requirements, rehabilitation and replacement of existing aging infrastructure, and public safety.

CURRENT AND FUTURE SEWER SERVICE AND SYSTEM FACILITY CHARGES

Sources and Uses of Funds

The Department's revenues are currently derived from three major sources: monthly sewer service charges, system facility charges (i.e., one time charges for new connections), and interest earned on fund balances. Of these sources, sewer service charges are the major source of revenue.

Existing Rates and Charges

Sewer service charges had been held constant since July 1, 1993. As part of a 6-year rate increase package adopted by the City and County Council, single-family residential rates will increase by 25 percent, beginning July 1, 2005. Sewer service charges will then increase by 10 percent annually through FYE 2011. This rate package is significant, providing the Department with a funding mechanism to accomplish its capital improvement needs and meet its debt service requirements through FYE 2011. Beginning July 1, 2005 an average single-family residential customer will be charged \$41.31 per month for service.

Wastewater system facility charges were increased in FYE 2004 from \$1,146 to \$4,641 per ESDU, and the City and County Council recently adopted a 3 percent annual escalator per ESDU beginning in FYE 2006 through FYE 2011. The wastewater system facility charge for FYE 2006 will be \$4,780.

Projected Rates and Charges

Sewer service charges and system facility charges as adopted will increase beginning in FYE 2006 to accommodate the needs of the capital improvement program and operation and maintenance requirements. System facility charges will increase at 3 percent annually, through FYE 2011.

SUMMARY OF PROJECTED REVENUES AND EXPENSES

A ten-year financial projection through fiscal year ending 2015 for the Department's operations has been prepared and is presented in Table ES.4. As shown, sewer service charges are projected to continue to be the major source of revenues.

The City Council has adopted a set of Debt and Financial Policies for its wastewater system that target, among other things, the City and County to maintain a 1.60 times coverage for its Senior Revenue Bonds and 1.25 times coverage for all Revenue Bonds (Senior and Junior). The City and County have adhered to the Debt and Financial policies in the previous years and have met all stated goals. It is expected that the City and County will continue to adopt increases in sewer service charges necessary to meet the debt service coverages prescribed in its Debt and Financial Policies. Current projections show that the debt service coverages will be achieved by: 1) increasing sewer service charges 25 percent in FYE 2006 and between 4.0 and 10.0 percent thereafter through FYE 2015; and 2) increasing system facility charges 3 percent annually beginning in FYE 2006. The City and County's historical rates have been reasonable and had not been increased since 1993. The City and County's past practice of periodic larger increases followed by extended periods of stable rates is common to other wastewater agencies.

Table ES.4 10-Year Projected Cash Flow Summary 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu											
Fiscal Year Ending	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Growth Assumptions											
Total ESDUs at Start of Year	287,002	288,602	290,202	291,802	293,402	295,002	296,602	298,202	299,802	301,402	
Total New ESDUs added	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	16,000
(Dollars in Millions)											
Revenues											
Sewer Service Charges (1)	\$142.7	\$157.4	\$173.6	\$191.5	\$211.2	\$233.0	\$257.0	\$273.2	\$284.9	\$297.1	\$2,221.4
System Facility Charges (1)	\$7.7	\$7.9	\$8.1	\$8.4	\$8.6	\$8.9	\$9.1	\$9.4	\$9.7	\$10.0	\$87.7
Interest on Sewer Reserve Fund and Unreserved Fund (1)	\$1.3	\$3.1	\$3.8	\$4.2	\$4.6	\$4.7	\$5.3	\$5.9	\$6.2	\$7.0	\$46.1
Other Revenues (2)	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.6
Total Revenues	\$151.7	\$168.4	\$185.6	\$204.1	\$224.5	\$246.6	\$271.5	\$288.5	\$300.8	\$314.1	\$2,355.7
Operating Expenses											
O&M Costs (3)	\$89.7	\$90.2	\$92.9	\$95.6	\$99.4	\$102.6	\$106.2	\$109.4	\$112.7	\$116.0	\$1,014.6
Total Expenses	\$89.7	\$90.2	\$92.9	\$95.6	\$99.4	\$102.6	\$106.2	\$109.4	\$112.7	\$116.0	\$1,014.6
Total Net Revenues	\$62.0	\$78.2	\$92.7	\$108.5	\$125.1	\$144.0	\$165.3	\$179.1	\$188.1	\$198.1	\$1,341.1
Debt Service											
2005 Sr. Bonds and Future Sr. Revenue Bond Debt Service (4)	\$0.0	\$10.2	\$19.9	\$32.0	\$40.8	\$47.8	\$56.2	\$66.0	\$75.1	\$82.2	\$430.2
Previous Sr. Revenue Bond Debt Service	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	129.5
Previous Jr. Revenue Bond Debt Service (4)	22.6	22.6	27.4	28.2	30.0	32.6	37.0	38.6	38.4	38.4	315.9
Reimbursable G.O. Debt Service	3.0	2.2	0.9	0.6	0.4	0.3	0.0	0.0	0.0	0.0	7.3
SRF Loans (Existing and Future)	10.5	13.2	13.9	14.5	15.2	13.2	16.5	17.2	16.4	14.3	145.0
Total Debt Service	\$46.6	\$61.3	\$75.0	\$88.6	\$100.1	\$107.5	\$125.7	\$137.7	\$145.9	\$151.0	\$1,039.2
Total Net Revenues Available for Other Requirements	\$15.4	\$16.9	\$17.7	\$19.9	\$25.0	\$36.5	\$39.6	\$41.4	\$42.3	\$47.1	\$301.9

Table ES.4 10-Year Projected Cash Flow Summary (Continued)
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu

Fiscal Year Ending	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Sr. Revenue Bond Coverage Ratio (5)	4.20	3.04	2.57	2.23	2.17	2.22	2.26	2.15	2.03	1.98	
Total Revenue Bond Coverage Ratio (5)	1.53	1.54	1.40	1.37	1.39	1.45	1.47	1.44	1.41	1.41	
Total Debt Coverage Ratio (5)	1.11	1.15	1.13	1.13	1.17	1.26	1.27	1.26	1.25	1.27	
(Dollars in Millions)											
Capital Project Financing											
Transfer to CIP from Sewer Fund	\$0.0	\$0.0	\$0.0	\$0.0	\$19.9	\$25.0	\$36.5	\$39.6	\$41.4	\$42.3	\$204.7
SRF Loan Proceeds	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	100.0
Net Revenue Bond Proceeds	140.0	160.0	200.0	170.0	100.0	100.0	110.0	110.0	100.0	60.0	1,250.0
Net CIP Financing	\$150.0	\$170.0	\$210.0	\$180.0	\$129.9	\$135.0	\$156.5	\$159.6	\$151.4	\$112.3	\$1,554.7
Capital Expenditures	\$107.5	\$161.5	\$216.8	\$186.3	\$131.1	\$127.3	\$138.7	\$150.6	\$125.1	\$93.3	\$1,438.2
Major Reserves & Funds (end of year)											
Unrestricted Reserve Balance	\$15.3	\$25.1	\$35.3	\$48.9	\$48.9	\$50.6	\$46.9	\$43.8	\$41.3	\$42.8	
Sewer Fund Operating Reserve (6)	\$22.4	\$22.6	\$23.2	\$23.9	\$24.9	\$25.6	\$26.5	\$27.3	\$28.2	\$29.0	
Bond Reserve (7)	\$31.1	\$38.1	\$45.0	\$50.7	\$54.7	\$63.8	\$69.7	\$73.8	\$76.3	\$78.9	
CIP Project Fund	\$33.2	\$41.8	\$35.0	\$28.7	\$27.5	\$35.2	\$52.9	\$61.9	\$88.2	\$107.2	
Projected Charges											
Monthly Sewer Service Charge (8)	\$41.31	\$45.44	\$49.99	\$54.99	\$60.49	\$66.54	\$73.19	\$77.58	\$80.68	\$83.91	
Increase over prior year	25.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	6.00%	4.00%	4.00%	
System Facility Charge	\$4,780	\$4,923	\$5,071	\$5,223	\$5,380	\$5,541	\$5,707	\$5,878	\$6,054	\$6,236	
Increase over prior year	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	

Table ES.4 10-Year Projected Cash Flow Summary (Continued)
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu

Fiscal Year Ending	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
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Notes:

- (1) Revenues from Sewer Service Charges, Facility Charges and Interest are as budgeted for FYE 2006. Revenues are calculated for FYE 2007 and beyond based on adopted and projected rate increases.
- (2) Includes connection services, lateral installation, misc. state funding, and other revenues.
- (3) Includes all operating expenses: salaries, non-salary personnel costs, administrative support, equipment, general fund rental and other expenses.
- (4) Includes take-out of commercial paper in 2005.
- (5) Revenues for coverage calculations do not include system facility charges.
- (6) Sewer fund reserve based upon maintaining 3 months of operating expenses. Excess/(shortfall) applied to unrestricted reserve.
- (7) Bond reserve set at 50% of following year's debt service obligation.
- (8) Sewer service charges through FYE 2011 based on adopted rate increases. FYE 2012 and beyond charges are calculated based upon projected rate increases.

CONCLUSIONS

Based upon our studies, the assumptions discussed in this report and our review of the data and analysis provided by the City and County of Honolulu and its consultants, we conclude the following:

Compliance with Discharge Requirements

All City and County-owned WWTPs are currently meeting national and state discharge requirements. The Sand Island WWTP plant experienced some difficulties in 2003 meeting the 30 percent BOD and 60 percent TSS reduction requirement. The 2006-2010 CIP Projects implement modifications required to improve plant operations and to accommodate planned growth, as well as projects required by and identified in the new discharge permit.

The CIP includes improvements to the City and County of Honolulu's Wastewater System collection and pumping facilities to assure compliance with current and anticipated federal and state regulatory requirements. The programs are outlined in the I/I plan as well as other collection system projects and are included in the CIP.

20-Year CIP

An estimated \$1.88 billion in 2005 dollars of non-discretionary CIP project expenditures for various treatment, collection and other facilities are required to be constructed during the 20-year CIP program. This is to eliminate the current and projected system problems, to meet consent decree milestones, and to provide a wastewater system in a satisfactory operating condition based on projected wastewater usage and environmental and other regulatory requirements. The remaining approximately \$0.24 billion in 2005 dollars of CIP projects are discretionary, and have been identified primarily to improve wastewater treatment and collection systems efficiency. These CIP project expenditures are to be funded from proceeds of bonds, including Series 2005 Bonds, and from net revenues and other charges.

The \$2.1 billion of CIP expenditure is technically sound and conforms with good engineering practice and the estimated total costs of the CIP have been realistically assessed.

2006-2010 CIP Projects

The 2006-2010 CIP projects fall into two general categories: collection system and wastewater treatment plant. The majority of the projects scheduled for this period are collection system projects, including pipelines and pump stations. The collection system improvement projects are needed to replace or rehabilitate corroded pipe, to reduce infiltration/inflow, and to extend service to unsewered areas. Replacement of severely corroded pipe will reduce infiltration/inflow during wet weather events, and will result in

lower operation and maintenance costs for both the collection systems and associated WWTPs. The collection system projects are described in Section 3.2.

Treatment plant improvement project appropriations anticipated during FYE 2006-2010 are needed to upgrade existing facilities, to satisfy regulatory requirements, and to improve the reliability of the facilities in handling peak wet weather flows. WWTP improvement projects are described in Section 3.3.

Financial Projections

The financial projections with respect to the wastewater system are based on reasonable and conservative assumptions and should fairly reflect the financial performance of the wastewater system. The projected 10-year cash flow is shown in ES.4.

Current customer rates and charges for the City and County of Honolulu compare favorably to other similar wastewater agencies. Given the continued capital intensive period for the City and County, the future sewer service charges will be increasing over this period to accommodate these capital expenditures. The past and current rate setting philosophy results in projected rates and charges which are reasonable when compared on an equivalent annual basis.

In the opinion of Carollo Engineers, the projected sewer service and system facility charges, as delineated in Table ES.4, will provide revenue sufficient to:

- Meet all projected costs of operation, maintenance and routine replacement of sewer system facilities.
- Meet the existing debt service obligations and the projected requirements for the Series 2005 Bonds and future bond issues.
- Provide sufficient revenue to pay the costs of the City and County of Honolulu's CIP through the end of the forecast period.
- Meet reserve requirements of bond resolution.
- Maintain compliance with the City's Debt and Financial Policies for the Wastewater System.

The funds obtained from the sale of the Series 2005 Bonds, current cash reserves, fees collected over the next few years, and future bond issues will be adequate to fund the current projects.

The rate at which growth occurs will not affect the ability of the City and County of Honolulu to meet its debt obligations because the growth is a small component of the overall costs and revenues associated with the financial projections. In general, many of the CIP projects are necessary and must proceed based on consent decree requirements and public safety

and health concerns with or without any additional connections. Moreover, debt service coverage ratios for the system's revenue bonds are calculated net of system facility charge revenues. This is consistent with existing bond resolutions and industry standards. Due to the unpredictable nature of growth, system facility charge revenues are not a guaranteed revenue source for the purposes of paying annual debt service obligations.

This report has been prepared at the request of the City and County of Honolulu for appending to the Official Statements relating to the issuance of the Series 2005 Bonds. The conclusions, observations, and recommendations contained herein constitute only the opinions of Carollo Engineers. The various background documents, statements and other information supplied by the City and County of Honolulu, its employees, and other consultants have been relied upon as being accurate in the performance of these analyses. However, no assurances are given nor warranties implied by Carollo as to the accuracy of such information. Carollo makes no certification and gives no assurances except as explicitly set forth in this report.

INTRODUCTION AND BACKGROUND

This report has been prepared in support of the Official Statements prepared for the issuance of approximately \$150.7 in principal amount of 2005 Senior Lien Revenue Bonds (referred to herein as the “Series 2005 Bonds”). Proceeds from the Series 2005 Bonds will be used to fund portions of the design and construction of a number of capital improvement projects throughout the City and County of Honolulu’s wastewater system. Net funding available for projects is anticipated to be approximately \$140 million. The capital improvement projects are part of an overall, comprehensive Capital Improvement Plan (CIP) initiated in 1998 and spanning approximately 20 years through the year 2017.

1.1 SCOPE OF REPORT

The scope of this report includes:

- A brief history of the City and County of Honolulu’s Wastewater Facilities, the adequacy and condition of the existing facilities, and a summary of the major planning activities that have recently been completed.
- A description of the program and projects to be funded with the Series 2005 Bonds, and the associated costs and implementation schedules.
- A summary of the timing and costs of ongoing and future projects as developed for the City and County of Honolulu’s wastewater system.
- A description of the sewer service charges and system facility charges over the forecast period.
- A summary of projected revenues and expenditures over the forecast period.
- The opinions of Carollo Engineers as to 1) the adequacy and condition of the existing facilities and the need for the 2006-2010 CIP Projects; 2) the reasonableness of the capital improvement program project cost estimates and schedules; 3) the reasonableness of the assumptions for the financial projections; 4) the adequacy and competitiveness of the City and County of Honolulu’s wastewater rate structure, and the adequacy of future revenues to cover operation and maintenance costs, expenses, debt service, coverage, future capital costs, and contingencies.

1.2 ENGINEER'S QUALIFICATIONS

Carollo Engineers, P.C. (Carollo) was selected to prepare this report as a result of their familiarity and knowledge of the City and County of Honolulu's wastewater treatment and conveyance facilities and operation and maintenance practices. Carollo Engineers was responsible for the overall report and financial analysis.

Carollo Engineers is a professional services engineering firm specializing in water and wastewater environmental engineering with 20 main offices and several project offices throughout the country. The main offices are located in Walnut Creek, Sacramento, Fresno, Bakersfield, Orange County, San Diego, San Jose, and San Bernardino, California; Denver, Colorado; Phoenix, Arizona; Salt Lake City, Utah; Reno and Las Vegas, Nevada; Portland, Oregon; Austin and Dallas, Texas; Boise, Idaho; Seattle, Washington; and Sarasota, Florida. Since its founding in 1933, Carollo has successfully completed more than 15,000 water, wastewater, energy, solid waste, storm drain, and other related infrastructure projects for public agencies, governmental agencies, and industries. Carollo is currently ranked number 77 in the top 500 engineering design firms in the United States by Engineering News Record.

Carollo has a total staff of over 600 professional employees including over 250 registered engineers in such disciplines as civil, structural, environmental, mechanical, chemical, sanitary, and corrosion engineering along with architects, planners, hydrologists, and specialists in other areas. Subconsultants are retained as needed in specialized fields.

Carollo is familiar with the City and County of Honolulu's wastewater facilities through previous studies and evaluations. Carollo Engineers recently completed a Wastewater Asset Evaluation and Condition Assessment as part of the City and County's Wastewater Asset Management Program. Carollo has also performed an Operations and Maintenance Evaluation of the Sand Island Wastewater Treatment Plant (WWTP) to assess overall effectiveness and efficiency. Carollo has also completed several projects for the City and County of Honolulu, including the 1998 and 2001 Wastewater System Revenue Bonds Engineering Reports, and various projects, in conjunction with R. M. Towill Corporation.

Carollo Engineers has developed award-winning master plans for major wastewater facilities in the west in recent years, including the development of the Sacramento Regional Wastewater Treatment Plant (SRWTP) Master Plan. This Master Plan was awarded the American Academy of Environmental Engineers (AAEE) Excellence Honor Award, and the California Water Environment Association (CWEA) Engineering Achievement Award. Carollo has also completed master planning for over \$6 billion in new wastewater facilities in the last five years for major wastewater agencies including Clark County, and Reno-Sparks-Washoe County (NV); the Sacramento Regional County Sanitation District (CA); the City of Fresno (CA); and several other wastewater agencies.

1.3 OVERVIEW OF THE DEPARTMENT OF ENVIRONMENTAL SERVICES

The City and County of Honolulu’s Department of Environmental Services is responsible for the operation, maintenance, compliance monitoring, facility planning and programming, and fiscal planning and execution for the City’s wastewater system.

The Department is composed of approximately 700 employees in support of the wastewater program. The Office of Administrative Support provides fiscal control, personnel support, asset management, and CIP program development activities. The Division of Wastewater Treatment and Disposal and the Division of Collection System Maintenance provide operation and maintenance of the treatment plants, pump stations, and the collection system. The Division of Environmental Quality provides performance monitoring, source control, and laboratory services. An additional 400 employees support the solid waste collection and disposal program. The Department consists of four divisions and an Office of Administrative Support as presented in Table 1.1.

Table 1.1 Listing of Divisions of the Department of Environmental Services 2005 Wastewater System Revenue Bonds Engineer’s Report City and County of Honolulu	
Division	Responsibility
Wastewater Treatment and Disposal	Operation of Wastewater Treatment Plants and Pump Stations
Collection System Maintenance	Maintenance of Collection System Sewer Lines
Environmental Quality	Pretreatment Program, WWTP Permit Compliance, Storm Water Permit Compliance, Reuse Programs
Refuse Collection and Disposal	Collection and Disposal of Solid Waste
Office of Administrative Support	Fiscal Control, Personnel Support, Asset Management and Capital Improvement Plan (CIP) Program Development

The Department of Environmental Services was created July 1, 1998, as part of a City-wide reorganization to streamline operations. Previously, the Department of Wastewater Management created by a City Charter change effective July 1, 1993, provided operation, maintenance, planning, design, and construction of City wastewater facilities. Prior to that time, wastewater management was a division under the Department of Public Works.

The City’s Department of Design and Construction provides wastewater project planning, design, and construction in support of the Department. Wastewater permitting is consolidated in the City’s Department of Planning and Permitting to provide one-stop

permitting service to customers and better relate approval of development plans with City-wide planning.

In recent years, the Department has received national recognition for excellence, including the following awards:

- 1999 Gold Award - National Association of Clean Water Agencies
 - Kailua WWTP
 - Waianae WWTP
- 1999 Silver Award - National Association of Clean Water Agencies
 - Honouliuli WWTP
 - Wahiawa WWTP
- 2000 Gold Award - National Association of Clean Water Agencies
 - Kailua WWTP
- 2000 Platinum Award - National Association of Clean Water Agencies
 - Waianae WWTP
- 2001 Grand Award - American Consulting Engineers Council
 - Nimitz Highway Reconstructed Sewer
- 2001 Grand Conceptor - Consulting Engineers Council of Hawaii
 - Nimitz Highway Reconstructed Sewer
- 2002 American Council of Engineering Companies, "Honor Award"
 - Hart Street WWPS Forcemain Project
- 2002 American Public Works Association (Hawaii Chapter)
 - Project of the Year - Hart Street Forcemain
- 2003 Visionary Partner Award - Synergen
- 2003 Communicator of the Year 2002 Video Award
- 2003 Environmental Achievement Award - National Association of Clean Water Agencies
- 2003 Gold Awards - National Association of Clean Water Agencies
 - Kailua WWTP
 - Waianae WWTP
 - Honouliuli WWTP
 - Wahiawa WWTP

- 2003 Silver Award - National Association of Clean Water Agencies
 - Sand Island WWTP
- 2004 Gold Awards - National Association of Clean Water Agencies
 - Kailua WWTP
 - Waianae WWTP
 - Honouliuli WWTP
- 2004 Silver Awards - National Association of Clean Water Agencies
 - Wahiawa WWTP
 - Sand Island WWTP

The Department, through the Department of Design and Construction, uses a combination of professional engineering staff and specialty subcontractors to provide project and construction management services. In-house permanent staff is supplemented by hiring outside consultants to work with project staff on an as-needed basis to support project activities. During construction, detailed up-to-date critical path method (CPM) project schedules are maintained. The professional staff provides overall project management and onsite construction inspection.

1.4 OVERVIEW OF EXISTING WASTEWATER FACILITIES

The wastewater systems service approximately 150,000 separate accounts and a population of approximately 640,000 of the Island's total population of 900,000. The customer base includes the residential population, businesses and industries, and other users located in the 600-square-mile service area. Out of 150,000 accounts, 140,000 are residential and represent approximately 78 percent of the total revenue from sewer service charges. The remaining 10,000 are non-residential and represent approximately 22 percent of the total revenue from sewer service charges. The average total volume of wastewater processed by the City and County's wastewater system in 2004 was 122 million gallons per day (mgd). A small number of private wastewater systems also serve some areas in the City and County. The average total volume of wastewater treated by all such private systems is 4.1 mgd.

1.4.1 General Description of Existing System

The island of Oahu, which constitutes the City and County of Honolulu, is divided into eight wastewater basins: Central Oahu, East Mamala Bay, Kailua/Kaneohe/Kahaluu, North Oahu (East), North Oahu (West), Waianae, Waimanalo, and West Mamala Bay. Each basin is served by a major WWTP. The basins and the associated WWTPs are shown in Figure 1.1 and listed in Table 1.2.

LEGEND:

- Wastewater Treatment Plant (WWTP)
- Wastewater Preliminary Treatment Facility (WWPTF)
- ▲ Wastewater Pump Station (WWPS)
- Region Boundary
- - - Basin Boundaries
- Shoreline
- Force Main
- ⋯ Outfall

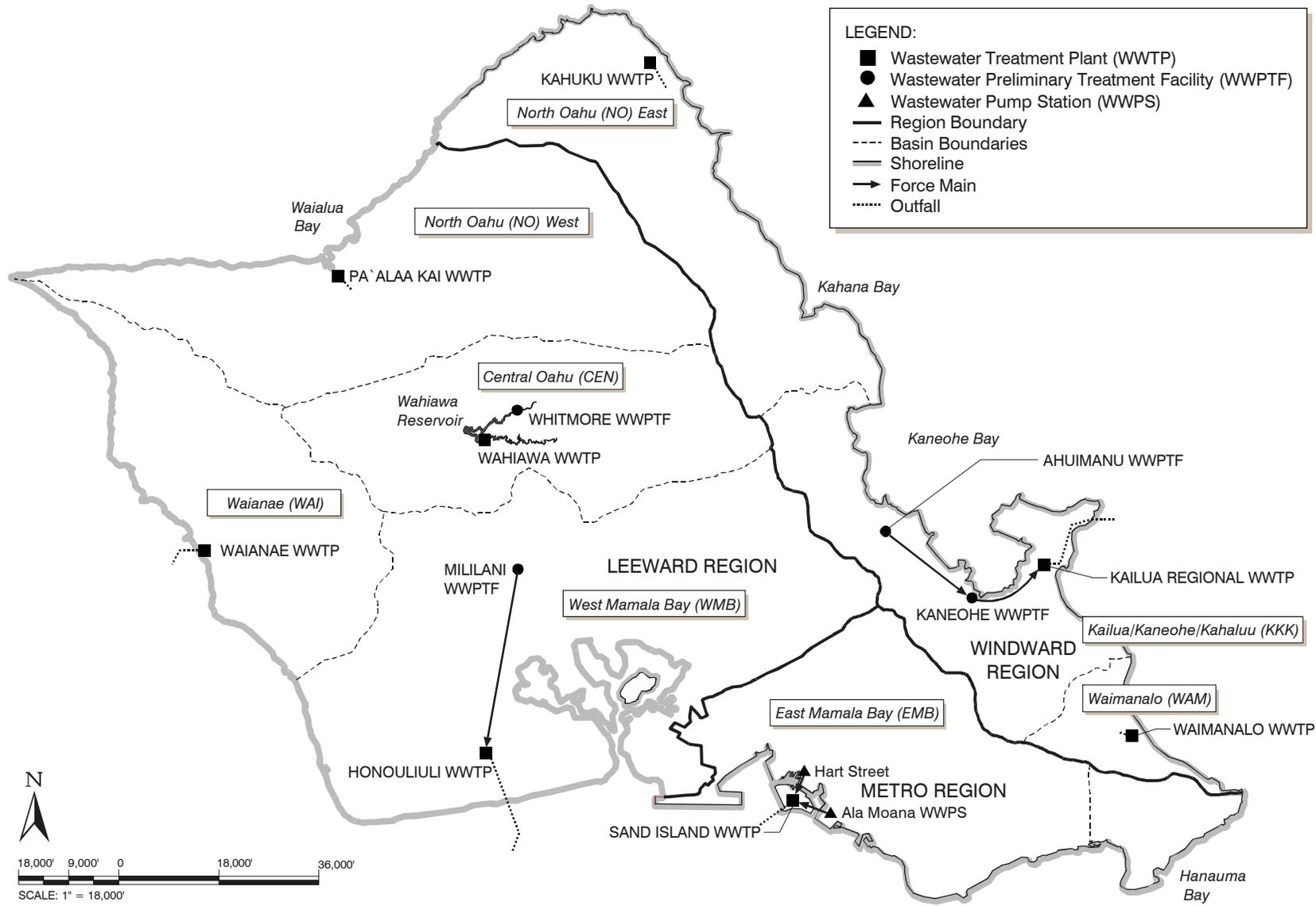


Figure 1.1
SERVICE AREAS
AND MAJOR FACILITIES
CITY AND COUNTY OF HONOLULU

Table 1.2 Wastewater Drainage Basins and Major Facilities 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu			
Region	Basin	Wastewater Treatment Plant	Discharge Location
Metro	• East Mamala Bay	• Sand Island	• Ocean
Leeward	• West Mamala Bay • North Oahu (West) • Waianae • Central Oahu	• Honouliuli • Pa'alaa Kai • Waianae • Wahiawa	• Ocean/Reuse • Injection Wells • Ocean • Reservoir
Windward	• Kailua/Kaneohe/Kahuluu • North Oahu (East) • Waimanalo	• Kailua Regional • Kahuku • Waimanalo	• Ocean • Injection Wells • Injection Wells

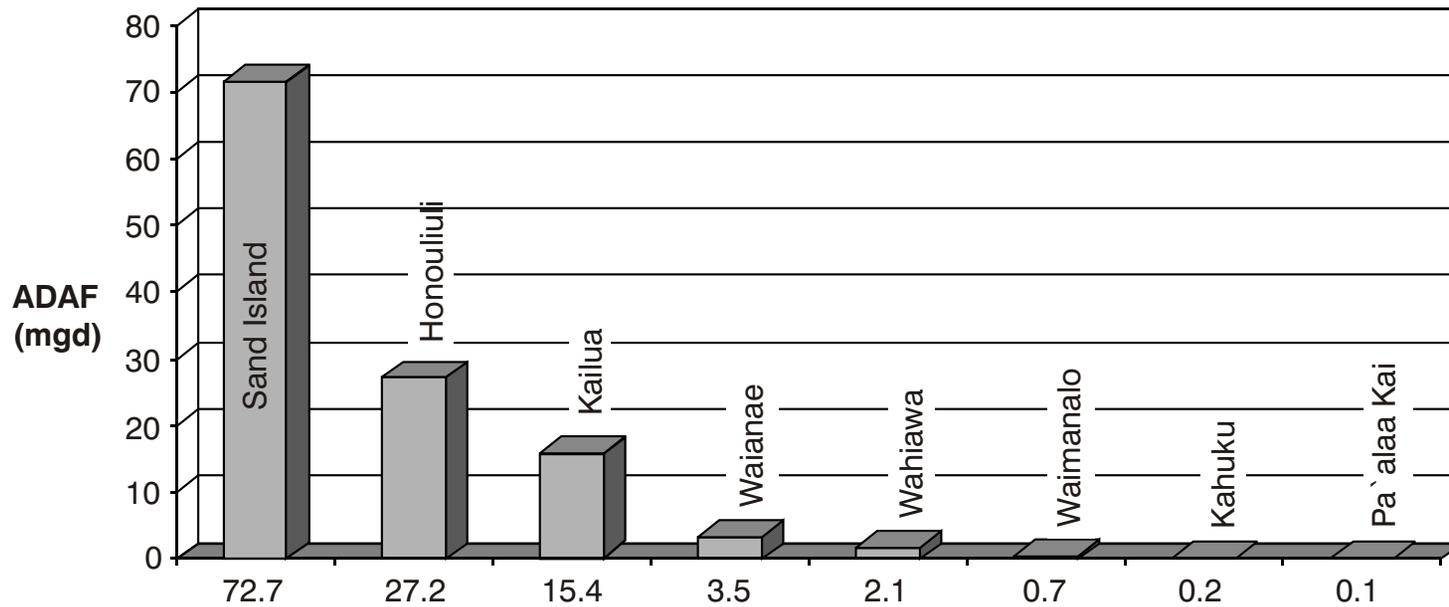
Almost 95 percent of the wastewater flows are treated by the three largest facilities: the Sand Island WWTP, which treats 72.7 mgd of average day annual flow (ADAF) from Honolulu, the Honouliuli WWTP, which treats 27.2 mgd ADAF from the Ewa, Mililani, and Pearl Harbor areas, and the Kailua Regional WWTP, which treats 15.4 mgd ADAF from the eastern populated areas of the island. Flows for each wastewater facility are presented in Figure 1.2 and summarized in Table 1.3. Descriptions of the wastewater basins and major facilities are provided below. All reported design capacities are based on average daily annual flows, calculated at 105% of the designed average dry weather flows.

East Mamala Bay

The largest and most densely-populated wastewater basin has a population of approximately 385,300 and is served by the Sand Island WWTP. Built in the 1970s, the Sand Island WWTP currently treats 72.68 mgd of wastewater flow and has a primary treatment capacity of 86 mgd. The wastewater facility serves the City of Honolulu and surrounding areas.

West Mamala Bay

The second largest basin has a population of approximately 251,200 and is served by the Honouliuli WWTP. Built in 1981, the Honouliuli WWTP currently treats 27.18 mgd of wastewater flow and has a primary treatment capacity of 40 mgd. A secondary treatment capacity of 13 mgd was added in 1997. The wastewater facility serves Ewa, Central Oahu as far north as Mililani, and the Halawa to Pearl City area of the Primary Urban Center. Secondary treated effluent is provided to a recycled water facility.



Total = 122 mgd

ADAF = Average Day Annual Flow

Figure 1.2
SUMMARY OF EXISTING WASTEWATER
TREATMENT FACILITIES AND FLOWS
CITY AND COUNTY OF HONOLULU

Table 1.3 Wastewater Flows by Treatment Facility⁽¹⁾ 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu			
Treatment Facility⁽²⁾	Design Capacity (mgd)⁽³⁾	2004 Flow (mgd)	Projected 2020 Flow (mgd)
Sand Island WWTP	86.10	72.68	92.60
Honouliuli WWTP	39.90	27.18	32.80
Kailua Regional WWTP	16.01	15.44	13.40
Waianae WWTP	5.46	3.54	3.50
Wahiawa WWTP	2.63	2.05	1.89
Waimanalo WWTP	0.74	0.67	0.62
Kahuku WWTP	0.42	0.18	0.15
Pa'alaa Kai WWTP	0.15	0.09	0.14
Total	151.40	121.83	145.10
Notes:			
(1) Average day annual flow (ADAF), millions of gallons per day.			
(2) Does not include 0.36 mgd of flow from the City's Kuliouou WWPS which is treated by the Hawaii Kai WWTP, a private treatment facility.			
(3) ADAF estimated based on 105% of design capacity for average dry weather flow.			

Kailua/Kaneohe/Kahaluu

The third largest basin has a population of approximately 105,500 and is served by the Kailua Regional WWTP, which serves the communities of Kailua, Kaneohe, Kahaluu, and surrounding areas. The Kailua Regional WWTP was built in the 1950s and was upgraded to secondary treatment in 1995. It currently treats 15.44 mgd of wastewater flow and has a secondary treatment capacity of 16 mgd.

North Oahu (East)

The North Oahu (East) basin is largely unsewered and is served by the Kahuku WWTP. Built in the early 1980s, the Kahuku WWTP currently treats 0.18 mgd of wastewater flow and has a secondary treatment capacity of 0.4 mgd.

North Oahu (West)

The North Oahu (West) basin is also largely unsewered and is served by the Pa'alaa Kai WWTP. Built in the mid-1980s, the Pa'alaa Kai WWTP currently treats 0.09 mgd of wastewater flow and has a secondary treatment capacity of 0.15 mgd.

The North Oahu (East) and North Oahu (West) basins have a combined population of approximately 31,300, including military bases.

Waianae

The Waianae basin has a population of approximately 40,600 and is served by the Waianae WWTP. The Waianae WWTP was built in the 1960s and was upgraded to secondary treatment in 1995. It currently treats 3.54 mgd of wastewater flow and has a secondary capacity of 5.5 mgd.

Central Oahu

The Central Oahu basin has a population of approximately 45,000 (including military bases), and is served by the Wahiawa WWTP. Built in the 1950s, the Wahiawa WWTP currently treats 2.05 mgd of wastewater flow and has a secondary treatment capacity of 2.6 mgd. It serves the communities of Wahiawa and Whitmore Village.

Waimanalo

The Waimanalo basin has a population of approximately 9,100 and is served by the Waimanalo WWTP, which is owned by the State and operated by the City. Built in the 1970s, the Waimanalo WWTP currently treats 0.67 mgd of wastewater flow and has a secondary treatment capacity of 0.7 mgd.

Although the Central Oahu, North Oahu (East), North Oahu (West), Waianae, and Waimanalo basins comprise the majority of the geographical area of the island, the population density is much lower in comparison to the East and West Mamala Bay and the Kailua/Kaneohe/Kahaluu basin areas. The combined population of these five basin areas is less than 15 percent of the total population of Oahu. The total design capacity of the WWTPs in these five basin areas is over 9 mgd and the current wastewater flow is approximately 6.0 mgd.

Private Systems

Two private wastewater systems provide collection and treatment for the communities of Hawaii Kai and Laie. The Hawaii Kai system has an average flow of 3.8 mgd, including flows from the City and County's Kuliouou WWPS, and the Laie system has an average flow of 0.6 mgd. Combined, the two systems process less than 4 percent of the average flow of the City and County's wastewater system. The City and County has entered into an agreement to acquire the Laie wastewater system over the next two years.

1.5 COMPLIANCE WITH DISCHARGE REQUIREMENTS AND CONSENT DECREES

The City and County of Honolulu highly values a clean environment. The Department has worked with the community, the EPA, and the State of Hawaii Department of Health to develop several consent decrees. The consent decrees reflect agreed upon actions to meet the objectives of the City and County of Honolulu, the EPA, and other major participants for improvements to the existing wastewater systems. The consent decrees confirm the overall

direction and schedule for the wastewater management program and are supported by the specific activities and actions developed through the facility planning efforts in recent years. A summary of the 309 consent decree milestones and associated due dates is presented in Figure 1.3. A summary of the four outstanding consent decrees and major objectives is presented in Table 1.4.

Table 1.4 Summary of Consent Decree Objectives 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu
<p>Honouliuli Consent Agreement (June 1993) - Completed</p> <ul style="list-style-type: none"> • Provide construction of secondary treatment facilities for flows that will be reused.
<p>309 Consent Decree (May 1995)</p> <ul style="list-style-type: none"> • Revise and implement the City's pretreatment program - Ongoing. • Develop and implement a 20-year Sewer Rehabilitation and Infiltration/Inflow Minimization Plant - Ongoing. • Develop and implement a beneficial reuse program for both wastewater and biosolids - Ongoing.
<p>Kailua/Kaneohe Consent Decree (August 1995)</p> <ul style="list-style-type: none"> • Allow participation of stakeholders in joint development Facilities Plan for Kailua Regional WWTP and Kaneohe WWPTF - Completed. • Construct and operate pilot UV disinfection facility at Kailua Regional WWTP - Completed. • Monitor water quality of the Kailua/Kaneohe watersheds in cooperation with the Kailua Bay Advisory Council - Ongoing.
<p>Wahiawa Consent Decree (March 1998)</p> <ul style="list-style-type: none"> • Provide a long-term solution for effluent disposal from Wahiawa WWTP - Completed. • Improve reservoir water quality - Ongoing. • Provide resource conservation through wastewater reclamation - Ongoing.

Each of the WWTPs operated by City and County of Honolulu are governed by a National Pollutant Discharge Elimination System (NPDES) Permit, a State Department of Health - Underground Injection Control Permit, or by Consent Decree.

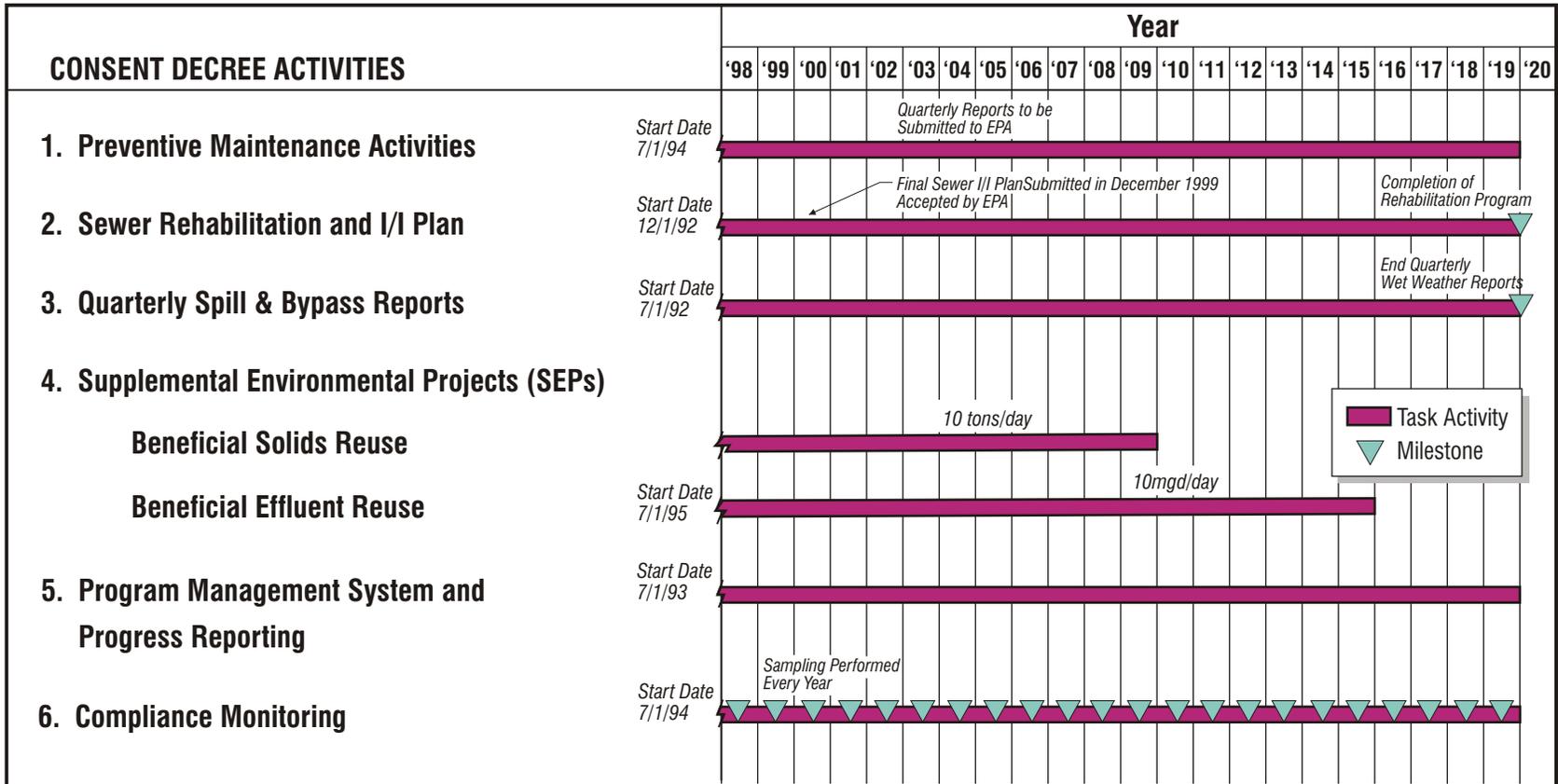


Figure 1.3
309 CONSENT DECREE
MILESTONES SCHEDULE
CITY AND COUNTY OF HONOLULU

Seven out of eight WWTPs are owned by the City and County of Honolulu and operated by the Department. All City and County-owned WWTPs are currently meeting national and State discharge requirements. The eighth WWTP, the Waimanalo WWTP, is owned by the State of Hawaii and operated by the Department. A summary of the wastewater treatment facilities permit requirements, compliance history, and potential changes in permit conditions are presented in Table 1.5.

Table 1.5 Discharge Requirements and Compliance History 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu								
Facility	Permit Type	Average Design Flow (mgd) ⁽³⁾	Approx. Current Flow (mgd) ⁽⁴⁾	Discharge Limit (mg/L)		Existing Treatment Level	Potential Changes in Discharge Requirements	Consistently Meets Requirements?
				BOD	TSS			
Sand Island WWTP	NPDES	86.10	72.68	30	60	Primary	---	Not Consistent ⁽²⁾
Honouliuli WWTP	NPDES	39.90	27.18					Yes
				30	30	Secondary	---	
				160	95	Primary	---	
Pa'alaa Kai WWTP	UIC EPA	0.15	0.19	30	30	Secondary	---	Yes
Waianae WWTP	NPDES	5.46	3.54	30	30	Secondary	---	Yes
Wahiawa WWTP	EPA Consent Decree	2.63	2.05	30	30	Tertiary	---	Yes
Kailua Regional WWTP	NPDES	16.01	15.44	30	30	Secondary	---	Yes
Kahuku WWTP	UIC EPA	0.42	0.18	30	30	Secondary	---	Yes
Waimanalo WWTP ⁽¹⁾	UIC EPA	0.74	0.67	30	30	Secondary	---	Yes

Notes:

(1) Owned by State of Hawaii, operated by the City and County of Honolulu.

(2) In 2003, the Sand Island WWTP did not consistently meet the 30 percent BOD average removal efficiency on two occasions and the 60 percent TSS average removal efficiency on two occasions.

(3) Average Design Flow based on ADAF estimated based on 105 percent of design capacity for average dry weather flow.

(4) Current Flow based on ADAF.

The Sand Island WWTP is the largest of the facilities owned and operated by the City and County of Honolulu. The original 1990 NPDES permit for Sand Island WWTP was a waiver permit which allowed discharge of less than secondary treated effluent into the deep ocean. The permit had effluent discharge limits for biological oxygen demand (BOD) and total suspended solids (TSS) which were met. Although the 1987 Clean Water Act specified a

minimum 30 percent removal of BOD and TSS for waiver dischargers, these limits were not included in the 1990 permit because of a grandfathering provision. A number of operating and process modifications were made throughout the last few years to accomplish this level of treatment.

The NPDES waiver permit was reissued in September 1998 with 30 percent removal limits for BOD and 60 percent removal limits for TSS in addition to effluent discharge limits. In 2003, the Sand Island WWTP plant has experienced difficulties in meeting the 30 percent BOD reduction requirement and TSS limit. This is partially due to the aging condition of the primary treatment and solids dewatering unit operations. Changes in influent waste characteristics have also contributed to the challenge of meeting the 30 percent BOD reduction. Improvements and upgrades to these unit operations are under construction. The 2006-2010 CIP projects will also implement additional modifications and upgrades required to fix other existing deficiencies, and to accommodate modest planned growth, as well as projects required by and identified in the permit. Since 2003, the Sand Island WWTP has been compliant with all discharge requirements.

The Waimanalo WWTP is a State-owned facility that is operated by the Department under agreement. It accounts for only 0.5 percent of the total current wastewater flow. Periodically, high influent BOD and TSS concentrations have been attributed to high infiltration/inflows (I/I) in the collection system, the absence of flow equalization facilities, and highly concentrated industrial discharges. Planning and design has been completed for modification and expansion of the facility to correct these minor problems. The State of Hawaii has released construction funding.

The Honouliuli WWTP NPDES Permit provides for up to 38 mgd of primary treatment. Capacity of up to 13 mgd of secondary treatment is available. A privately owned 13 mgd tertiary plant was built on site in 2000 for providing recycled water for irrigation and industry. The City and County of Honolulu has entered into a consent decree with the EPA and is working to meet the required reuse supplemental environmental project goals. The State Department of Health has issued an additional permit for the Honouliuli WWTP for private operation of the recycled water facility. The City is currently recycling approximately 7.2 mgd from the Honouliuli Reclamation Facility, which is owned by the Board of Water Supply. Upgrades and modification of Honouliuli WWTP facilities, including the solids handling system and process lab, are scheduled for design and construction as part of the 2006-2010 CIP.

The Wahiawa WWTP currently does not have a state permit to discharge secondary effluent to the Wahiawa Reservoir. The plant is covered in the interim by a Consent Decree to increase the quality of water discharge from Wahiawa WWTP. The increased level of treatment of effluent discharged to the reservoir is to allow for beneficial use of the effluent both in the reservoir and by downstream agricultural users. Construction of projects which provide for a higher level of treatment of effluent from the Wahiawa WWTP, and thereby

improve the water quality of the reservoir, was completed in 2001. Additional improvements are scheduled for design and construction as part of the 2006-2010 CIP.

1.6 CAPITAL PROGRAM PLANNING AND FUTURE DIRECTION

The Department has prepared a 20-year CIP, which incorporates the results of several facility plans and preliminary designs for various wastewater facilities. The CIP was developed with a number of financial and engineering objectives in mind, including minimizing life cycle costs versus capital costs, improving project delivery cycles, increasing organizational effectiveness, and targeting staff reductions through attrition. It includes facility plans and preliminary designs for most of the major wastewater treatment facilities, and identifies collection system and piping improvements, which represent a majority of the capital improvement projects.

The City and County of Honolulu has identified several capital improvement projects to meet consent decree requirements. The 2006-2010 CIP projects are recognized as the highest priority projects for meeting consent decree requirements, replacing severely corroded pipe, and for satisfying regulatory requirements. Information on the need for the 2006-2010 CIP projects, descriptions and estimated costs, and implementation schedules follow in Chapter 3. The long-term facilities needs, project descriptions, costs and implementation schedules are summarized in Chapter 4.

1.7 WASTEWATER FLOW PROJECTIONS

The wastewater flow and strength projections are based on the anticipated growth rates included in the City and County of Honolulu's General Plan. Growth is not a significant factor in driving the overall need for 20-year CIP projects. Growth for the total population of the City and County of Honolulu is presented in Figure 1.4 and is summarized by basin in Table 1.6. Wastewater flow projections through the year 2017 are presented in Figure 1.5.

As shown in Figures 1.4 and 1.5, the projected increase in population and associated wastewater flows are not significant over the 20-year planning period. Population growth is projected to average approximately 1 percent per year and associated wastewater flows are projected to increase by a similar percentage. The slight difference between projected population growth and wastewater flows is due to the planned reduction in unsewered areas with the conversion of cesspools to connect to the public sewage system. Also, for financial planning purposes, and to project revenues from new equivalent-single-family dwelling units (ESDUs) paying wastewater system facility charges, new connections, as shown in Figure 1.6, are conservatively projected to increase at a slower rate than General Plan population projections.

The majority of the population growth is expected to occur in the East and West Mamala Bay urbanized areas.

**Table 1.6 Historical and Projected Resident Population By Basin⁽¹⁾ Oahu, 1990-2020
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu**

Basin	1990	2000	2005	2010	2015	2020
East Mamala Bay	380,157	374,366	385,303	402,731	421,828	434,250
West Mamala Bay	199,005	239,713	251,239	267,301	273,752	293,036
North Oahu (East/West) ⁽²⁾	29,992	31,094	31,331	31,372	34,325	34,924
Waianae	37,411	39,271	40,635	41,094	41,336	42,183
Central Oahu	44,540	45,254	44,996	44,716	44,546	44,231
Kailua/Kaneohe/Kahaluu	108,639	106,300	105,502	104,738	108,812	109,214
Waimanalo	9,055	9,161	9,099	9,043	9,631	9,749
Total	808,799	845,159	868,105	900,955	934,230	967,587

Notes:

(1) Population from Planning Department. Military bases are included (City and County of Honolulu Planning Department, 2000; City and County of Honolulu).

(2) Includes population of Laie, which is currently served by a private sewer system operator, but which will be served by the City and County of Honolulu within the next two years.

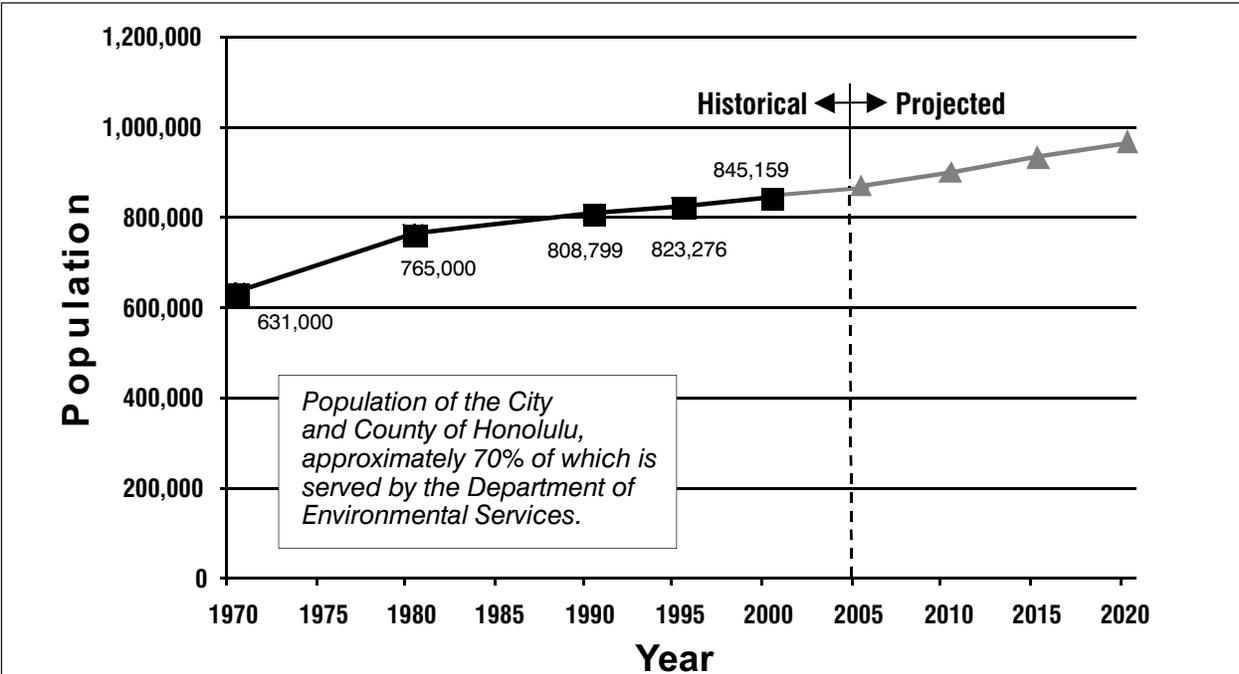


Figure 1.4
HISTORICAL AND PROJECTED
POPULATION
CITY AND COUNTY OF HONOLULU

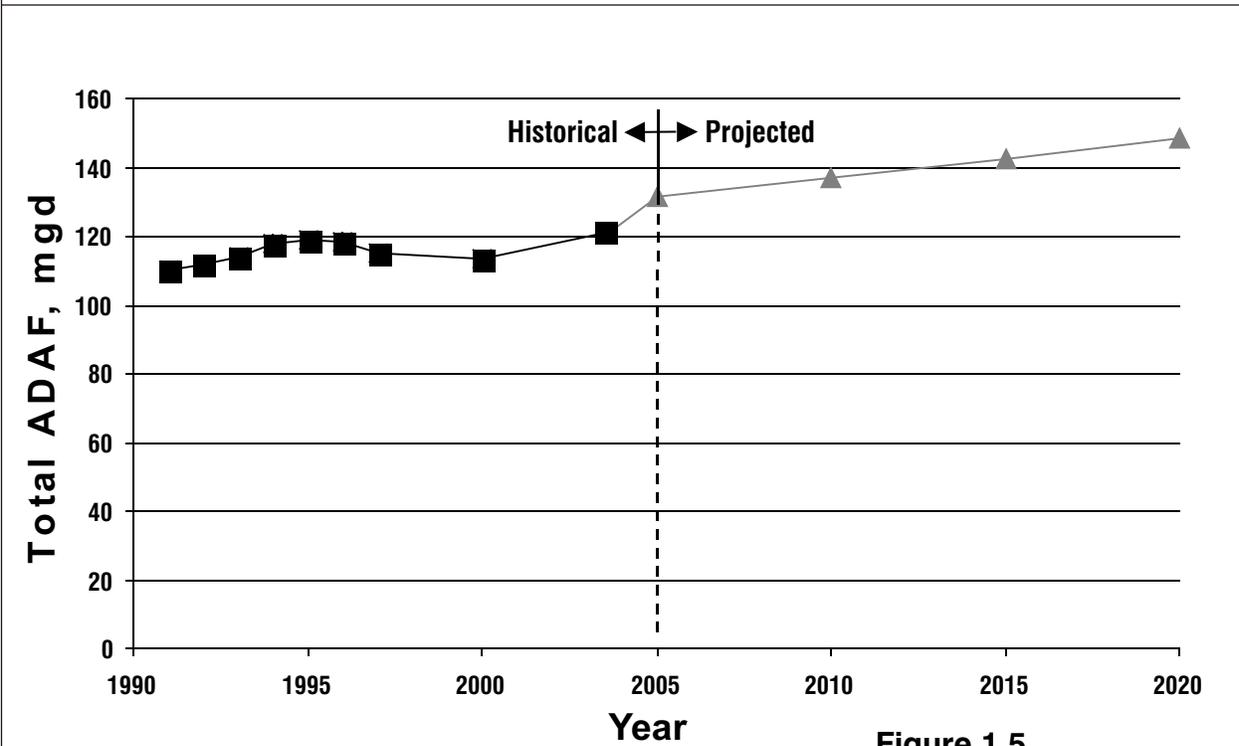
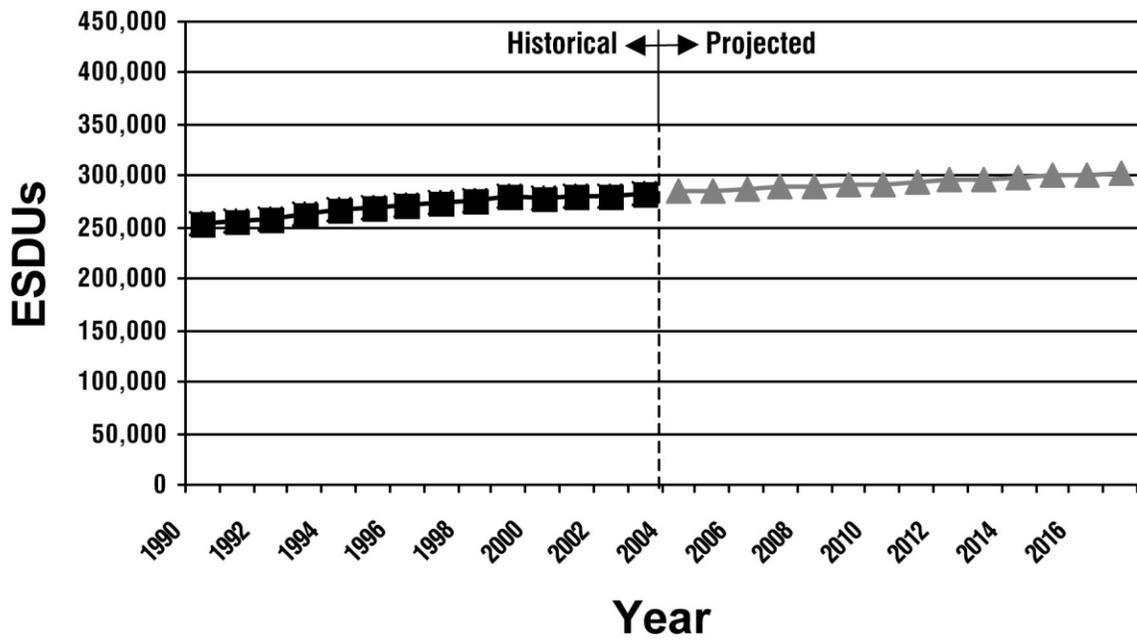


Figure 1.5
WASTEWATER FLOW PROJECTIONS
CITY AND COUNTY OF HONOLULU

ADAF = Average Day Annual Flow



ESDU = Equivalent Single-Family Dwelling Unit

Figure 1.6
EDUs GROWTH PROJECTIONS
CITY AND COUNTY OF HONOLULU

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CAPITAL IMPROVEMENT PLAN IMPLEMENTATION

Chapter 2 addresses the progress and implementation of the 1998-2017 Capital Improvement Plan (CIP) projects, including the accomplishments and completed projects through 2005. This chapter also details those projects planned for the Fiscal Years Ending (FYE) 2006-2010, with particular emphasis on the major capital facility appropriations for wastewater management projects anticipated through FYE 2010. Projects beyond FYE 2010 are addressed in Chapter 3.

2.1 CIP ACCOMPLISHMENTS AND PROGRESS

Several significant projects, identified in the 1998-2017 CIP, have been completed or are in the final stages of construction. A total of \$738.5 million has been appropriated in fiscal years 1998-2005 towards the CIP, including upgrades and rehabilitation of collection system sewers, pump stations, and improvements to wastewater treatment facilities. These major projects have been undertaken to comply with consent decree and discharge permit requirements, as well as for health and safety, improvements, reliability, and expansion to accommodate planned growth.

Table 2.1 summarizes the appropriations for CIP projects in 1998-2005.

Project	(Thousands of Dollars)								Total Appropriations 1998-2005
	Fiscal Year Ending								
	1998	1999	2000	2001	2002	2003	2004	2005	
Collection System Projects	\$38,050	\$12,275	\$43,671	\$56,281	\$64,047	\$98,114	\$25,524	\$18,672	\$356,635
Treatment Plant Projects	\$12,766	\$15,157	\$9,337	\$31,958	\$105,965	\$37,059	\$35,598	\$92,542	\$340,381
Project Management and Equipment	\$0	\$0	\$3,355	\$6,136	\$6,757	\$7,798	\$7,801	\$9,633	\$41,480
Total CIP	\$50,816	\$27,432	\$56,363	\$94,375	\$176,769	\$142,971	\$68,923	\$120,847	\$738,496

2.1.1 Permit and Consent Decree Projects

The major consent decree projects, completed as of the writing of this report, include the Ala Moana and Kapiolani Trunk Sewer Replacement and Rehabilitation, and Mililani Kamehameha Highway Sewer Reconstruction, and the Kainui Drive Sewer Reconstruction

in Kailua. The Kalaheo Avenue Sewer Reconstruction is due for completion in late 2006. The Kainehe/Hamakua/Keolu Sewer Rehabilitation is scheduled to be completed mid 2005.

Other projects complete in accordance with the utility's consent decree requirements include the development and implementation of Collection System Rehabilitation Plans, the development of a Facilities Plan for the Kailua and Kaneohe Wastewater Treatment Plants (WWTPs), the construction of ultraviolet disinfection facilities at the Kailua WWTP, and construction of the Wahiawa WWTP reclamation system.

Major projects completed to comply with discharge permit requirements include the Waipahu WWPS Modifications, and the Waikapoki WWPS Modifications. The Sand Island WWTP Unit 1, Phase 2A Headworks Project is ongoing and due for completion in 2005. The Sand Island WWTP Disinfection Facility and Effluent Pump Station Improvements are ongoing and are scheduled for completion in 2005. The Hart Street Wastewater Pump Station (WWPS) and Forcemain Replacement and Sand Island WWTP Primary Treatment Expansion are ongoing and scheduled for completion within the next few years.

2.1.2 Other CIP Projects

Other significant CIP projects that have been completed include the Ala Moana WWPS Modifications, the Gulick Avenue Relief Sewer Construction, the Kaneohe WWPTF Effluent Pump Station Modifications, the Kaneohe Bay Sewer Construction, and the Wahiawa WWTP Improvements.

2.2 ONGOING CAPITAL PROGRAM

In addition to new projects discussed further in sections 2.4 through 2.6, the Department's CIP in fiscal years ending 2006-2010 includes completion of numerous projects initiated in prior years. The Department is committed to the successful completion and implementation of ongoing projects and improvements.

Major ongoing projects include a number of the City's collection system and sewer facilities, including:

- The Saint Louis Heights Sewer Rehabilitation.
- Sewer system rehabilitation throughout the East Mamala, West Mamala, and Windward Basins.
- Sand Island WWTP - Disinfection Facility Improvements and Effluent Pump Station, Headworks, and construction of two new clarifiers.

2.2.1 Asset Management Program

In addition to the ongoing capital projects discussed above, the Department has implemented an Asset Management Program, consistent with Government Accounting Standards Board Directive No. 34 (GASB 34). The initial steps of the Asset Management

Program included an inventory of physical assets, a condition assessment for wastewater facility assets, and value estimation for each asset and facility.

The objective of an asset management program is to allow a utility to meet its defined level-of-service goals in a cost-effective and efficient manner. Asset management provides guiding principles for the effective utilization of financial, capital, operations, maintenance, and staffing resources. Asset evaluation and financial review of investments, such as employing lifecycle cost, provides for more informed decisions, improved accountability measures, greater risk management, and long-term cost reductions.

Carollo recently assisted the Department with an asset inventory, condition assessment, and valuation for three of the wastewater treatment plants, three of the wastewater pretreatment facilities, and five wastewater pump stations. The three wastewater plants assessed were the Kailua WWTP, Kahuku WWTP, and the Pa'ālaa Kai WWTP; the three wastewater pretreatment facilities (WWPTF) were Ahuimanu WWPTF, Kaneohe WWPTF, and Mililani WWPTF; the five pump stations were the Beachwalk WWPS, Ala Moana WWPS, Mililani WWPS, Waipahu WWPS, and the Pearl City WWPS. The Sand Island WWTP, Hart Street WWPS, and Ala Moana WWPS No. 1 are currently undergoing major capital improvement projects, and will be evaluated upon completion of those improvements. The Hart Street force main replacement project has been completed.

2.3 PROJECT MANAGEMENT

The Department has proven its capability in delivering projects on time and within budget. The Department's project delivery team has received several awards, including those awarded for the Nimitz Highway Relief Sewer Project:

- American Society of Civil Engineers, Hawaii Section, 1996 Outstanding Achievement Award.
- American Public Works Association, Hawaii Chapter, 1997 Project of the Year (Large Environmental).
- American Consulting Engineers Council, National Honor Award.

Examples of the Department's proven capabilities in meeting project milestones are listed below.

2.3.1 Waianae WWTP Secondary Treatment Upgrade

The Waianae WWTP was originally a 5.2 average dry weather flow (ADWF) primary treatment plant which discharged its wastewater through an ocean outfall. During reapplication for the permit for the plant in the early 90s, the waiver of secondary treatment was denied and the plant was required to upgrade to secondary treatment. Design was completed in 1993 and construction was completed on time in 1995 and within the programmed budget of \$25 million. In 1996 and 1997, the facility received the Gold Award from the AMSA.

2.3.2 Infiltration/Inflow Plan

As part of the original 309 consent decree, the City and County of Honolulu was required to develop a long-term strategy for the reduction of wastewater flows due to infiltration and inflow (I/I). The number of collection system projects identified in the CIP are largely the result of the completion of a comprehensive I/I Plan completed in December 1999. The I/I Plan was subsequently approved by the EPA, and has become the basis for ongoing collection system improvements.

2.3.3 Wastewater Information Management System (WIMS)

The base hardware and software installation for WIMS was completed in 1994 and is linked to the City's geographical information system for mapping of the sewer lines. This requirement was part of the 309 consent decree. Despite being installed, the system still required implementation from taking appropriate field data to optimizing the scheduling system. Internally developed procedures and correlation studies have progressed to reflect the following improvements: field data efficiency (usable data) has improved from 43 percent in 1992 to 97 percent in 1997 and correlation studies on pipe conditions to pipe characteristics have led to a more optimized maintenance and replacement schedule. The WIMS system for optimizing sewer line maintenance and replacement schedules continues to improve. The maintenance management software was replaced in 2001 with an asset management/work management software.

2.4 NEED FOR THE 2006-2010 PROJECTS

The 2006-2010 CIP projects were developed through a comprehensive planning process involving a review of facility needs throughout the island. During this review, prioritization criteria were developed and major projects were ranked. The prioritization criteria are summarized in Table 2.2. Non-discretionary prioritization criteria include safety and public health, permit and regulatory compliance, consent decree activities, and expansion-related needs, while discretionary criteria include reliability and preventative-maintenance related needs.

The 2006-2010 CIP projects fall into two general categories: collection system improvements and wastewater treatment plant facility improvements. The majority of the projects scheduled for this period are collection system projects, including pipelines and pump stations. The collection system improvement projects are needed to replace or rehabilitate corroded pipe, to reduce infiltration/ inflow, and to extend service to unsewered areas. Replacement of severely corroded pipe will reduce infiltration/inflow during wet weather events, and will result in lower operation and maintenance costs for both the collection systems and associated WWTPs. The collection system projects are described below in Section 2.5.

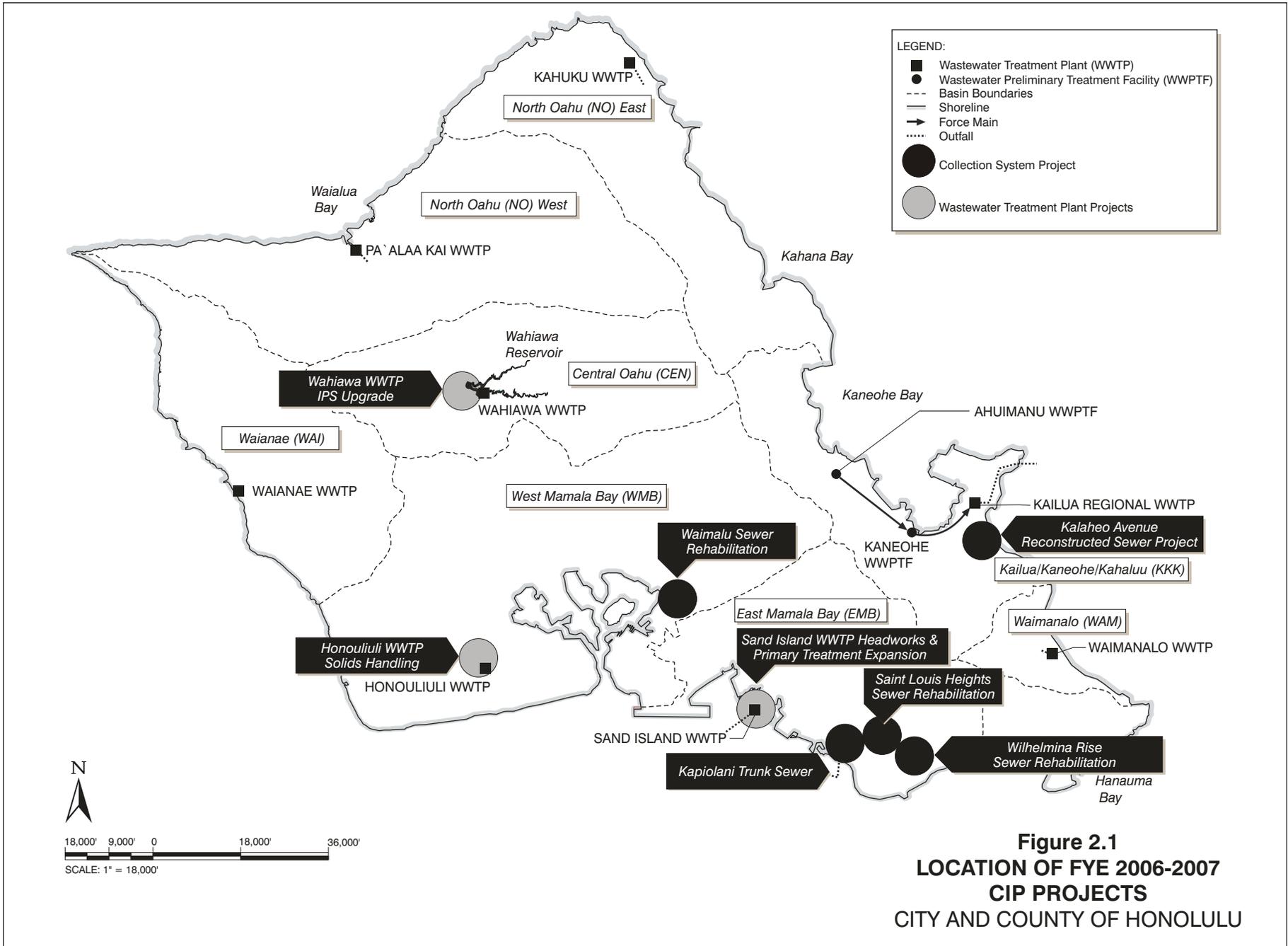
Table 2.2 Summary of Estimated CIP Project Appropriations, 2006-2010 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu							
(Thousands of Dollars)							
Project	Fiscal Year Ending					Total Appropriations	
	2006	2007	2008	2009	2010	2006-08	2006-10
<u>Collection System Projects</u>							
Consent Decree / Non-Discretionary Projects	\$108,948	\$131,660	\$41,859	\$49,374	\$46,176	\$282,467	\$378,018
Discretionary Projects	38,002	27,750	27,000	32,000	0	92,752	124,752
Subtotal: Collection System	\$146,950	\$159,410	\$68,859	\$81,374	\$46,176	\$375,219	\$502,770
<u>Treatment Plant Projects</u>							
Consent Decree / Non-Discretionary Projects	\$83,232	\$34,064	\$17,681	\$21,261	\$30,001	\$134,977	\$186,239
Discretionary Projects	426	0	801	0	15,400	1,227	16,627
Subtotal: Treatment Plant	\$83,658	\$34,064	\$18,482	\$21,261	\$45,401	\$136,204	\$202,866
<u>Project Management and Equipment</u>							
	\$9,811	\$10,369	\$10,369	\$10,369	\$10,369	\$30,549	\$51,287
Total CIP	\$240,419	\$203,843	\$97,710	\$113,004	\$101,947	\$541,972	\$756,923
Notes:							
(1) All costs are presented in 2005 dollars.							

Treatment plant improvement project appropriations anticipated during FYE 2006-2010 are necessary to upgrade existing facilities, to satisfy regulatory requirements, and to improve the reliability of the facilities in handling peak wet weather flows. WWTP improvement projects are described in Section 2.6.

The general locations of the major CIP projects to be constructed in the first two years, from July 2005 to June 2007, are shown in Figure 2.1.

2.5 COLLECTION SYSTEM PROJECTS

The City and County of Honolulu plans on beginning numerous collection system design and construction projects as well as continuing existing projects between fiscal years ending 2006-2010. The City and County of Honolulu have provided an allotment for smaller replacement projects, which can be approved quickly. The total appropriations for these projects through the year 2010 are \$502.8 million, with an expected \$375.2 million to be appropriated within the first three years and \$127.6 million to be spent in the remaining two years.



Collection system projects between fiscal years ending 2006 and 2010 include the Wilhelmina Rise Sewer Rehabilitation, the Kalaheo Avenue Sewer Reconstruction, the Kapiolani Area Sewer Reconstruction, the Saint Louis Heights Sewer Rehabilitation, the Kahili Valley Sewer Reconstruction, the Beachwalk WWPS, and many other projects including ones that stem from the I/I Plan.

2.6 WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECTS

The Department has planned for the design and/or construction of 21 major WWTP improvement projects, with all WWTP projects totaling \$202.9 million between fiscal years ending 2006-2010. Within the first three years, \$136.2 million is to be appropriated and \$66.7 million in the remaining two years. The most significant of these projects are the Sand Island WWTP Unit 1 Phase 2A Project, Sand Island WWTP Primary Treatment Expansion, and Honouliuli WWTP Solids Handling System Improvements Projects.

2.7 SUMMARY OF ESTIMATED PROJECT COSTS

The summary of costs for 2006-2010 CIP projects by project category is presented in Table 2.2. These costs include planning, design, and construction costs as well as all engineering, administrative, and legal expenses. \$140 million of the proceeds of the Series 2005 Bonds will fund a portion of the 2006-2010 CIP projects, with the balance to be primarily met from existing funds of the Department, new State Revolving Fund (SRF) loans, annual revenues, and from the proceeds of future revenue bond issues.

FUTURE PROJECTS

The City and County of Honolulu Department of Environmental Services has identified facility needs through the year 2017 for the eight major wastewater treatment plants (WWTPs) and associated collection system facilities. Cost estimates and implementation schedules for the projects have been developed for the planning period. This chapter provides an overview of the 20-year capital improvement needs of the Department.

Capital costs reported within this chapter reflect capital appropriations rather than capital expenditures. While actual expenditures can vary on an annual basis, appropriations represent a commitment by the City and County of Honolulu to undertake the necessary capital projects in order to meet environmental projection objectives and level-of-service goals over the 20-year planning period. Projected annual capital expenditures are incorporated within the cash flow analysis in order to evaluate the Utility's ability to meet annual expenditure needs and debt service coverage requirements.

3.1 LONG-TERM EXPANSION AND REHABILITATION NEEDS

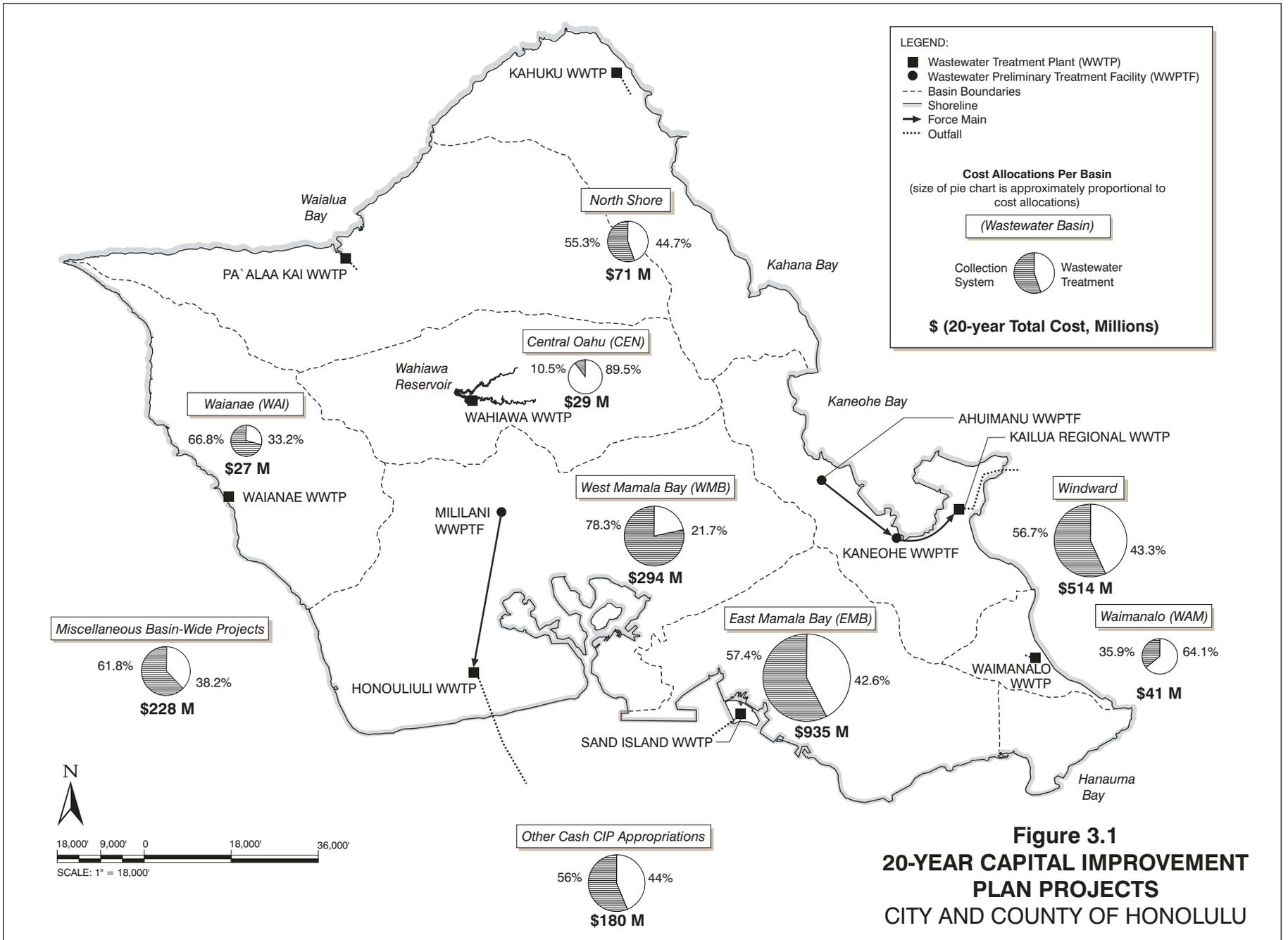
A summary of the estimated project costs for each of the wastewater basins for the 20-year period is presented in Table 3.1. These include the 2006-2010 Capital Improvement Plan (CIP) projects as well as all other projects identified for the 20-year planning period. Table 3.1 also lists the distribution of costs among project categories. The two major project categories are collection system improvements and WWTP improvements. Figure 3.1 shows the 20-year CIP breakdown by project category for each basin.

A summary of the 20-year CIP total costs (in 2005 dollars) by project category is shown in Figure 3.2. Approximately 57 percent of the total project costs are associated with collection system improvements, and 43 percent with WWTP improvements.

A summary of the 20-year CIP total cost (in 2005 dollars) by primary project purpose is presented in Figure 3.3. As shown in Figure 3.3, approximately 88 percent of the total costs are associated with non-discretionary projects that must be completed in order to satisfy consent decree, permit/regulatory, expansion, and safety/public health requirements. The remaining 12 percent of the total costs are associated with discretionary projects that have been identified to improve wastewater treatment and collection systems. The Department has identified these discretionary projects in order to address reliability, improvement, and preventive maintenance concerns before they become non-discretionary projects.

3.2 COLLECTION SYSTEM IMPROVEMENTS

As shown in Table 3.1, \$1.21 billion (approximately 57 percent) of the 20-year CIP total costs are associated with improvements to the collection system. Some pipelines in the



20-year appropriations total = \$2.1 Billion*

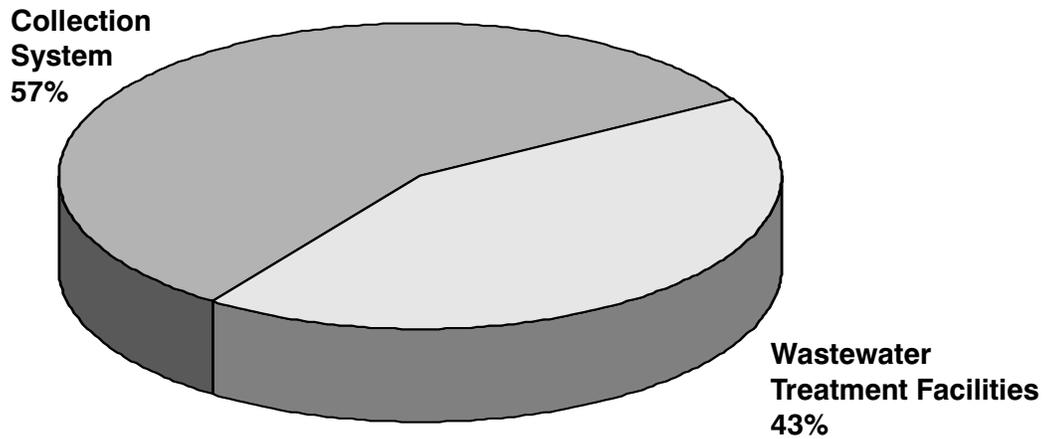
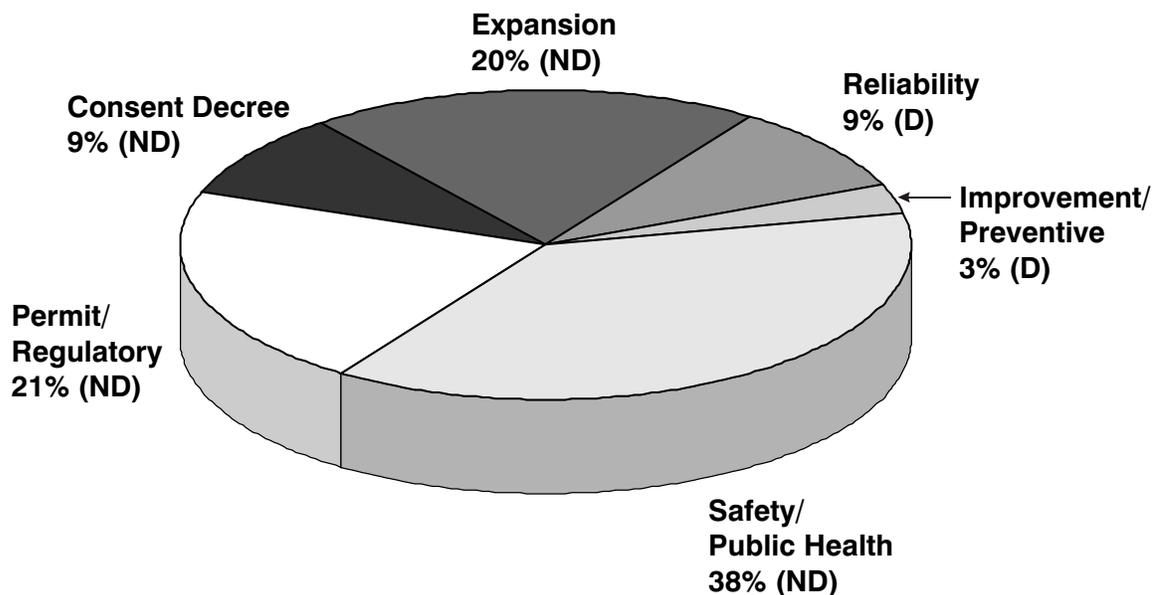


Figure 3.2
20-YEAR CIP BY PROJECT CATEGORY
CITY AND COUNTY OF HONOLULU

20-year appropriations total = \$2.1 Billion*



D = Discretionary
ND = Non-discretionary

Figure 3.3
20-YEAR CIP BY PROJECT MAIN PURPOSE
CITY AND COUNTY OF HONOLULU

*Appropriations reported in 2005 dollars

**Table 3.1 Summary of 20-Year Appropriations (FYE 1998 - FYE 2017)
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu**

Basin	(Thousands of Dollars)		
	Project Category		20-Year Total
	Collection System	Treatment Plant	
East Mamala Bay	\$536,737	\$398,086	\$934,823
West Mamala Bay	230,002	63,635	293,637
Windward	291,440	222,789	514,229
Central Oahu	3,032	25,894	28,926
Waianae	17,961	8,943	26,904
Waimanalo	14,530	25,979	40,509
North Shore	39,322	31,763	71,085
Miscellaneous Projects	78,241	125,613	203,854
Total: CIP	\$1,211,265	\$902,701	\$2,113,966

Notes:
FYE = Fiscal Year Ending
All costs presented in 2005 dollars.

existing collection system are approaching the end of their useful lives. This is due to the fact that the major pipeline facilities were installed 40 to 100 years ago, and the piping system is in a harsh underground environment. The harsh environment exists because of the saline content of the high groundwater table, and because of the relatively flat slopes and tropical temperatures which accelerate sulfide generation and corrosion rates.

The condition of the collection system has resulted in excessive infiltration, inflow, and collection system overflows during wet weather events. This results in increased operation and maintenance costs for both the collection system and treatment plant facilities. The consent decree action items address these issues through a comprehensive rehabilitation program beginning with the high priority projects. The 2006-2010 CIP projects include most of the remaining highest priority collection system projects.

3.2.1 Wastewater Treatment Plant Improvements

The three major wastewater treatment plants are the Sand Island WWTP, the Honouliuli WWTP, and the Kailua Regional WWTP. Separate facility plans have been completed for each of these major facilities. The facilities plans identify future needs for system improvements and to accommodate growth. Other facility plans are currently being updated.

A facilities plan layout for the Sand Island WWTP is shown in Figure 3.4. Figure 3.5 illustrates the Sand Island WWTP primary expansion to 90 mgd projected to be complete in 2007. The major projects to be completed within the 20-year planning horizon for the plant include:

- Construction of higher capacity headworks to replace the existing headworks.
- Modifications to existing primary clarifiers, and addition of new primary clarifiers.
- Expansion of the existing sludge conditioning system, or replacement of the system with new anaerobic digesters and power generation facilities, or implementation of “in-vessel” composting.
- New disinfection facilities and effluent pump station improvements.

A facilities plan layout for the Honouliuli WWTP is shown in Figure 3.6. The major projects identified for the plant include:

- Expansion of the solids handling facilities to accommodate the recently completed plant expansion.

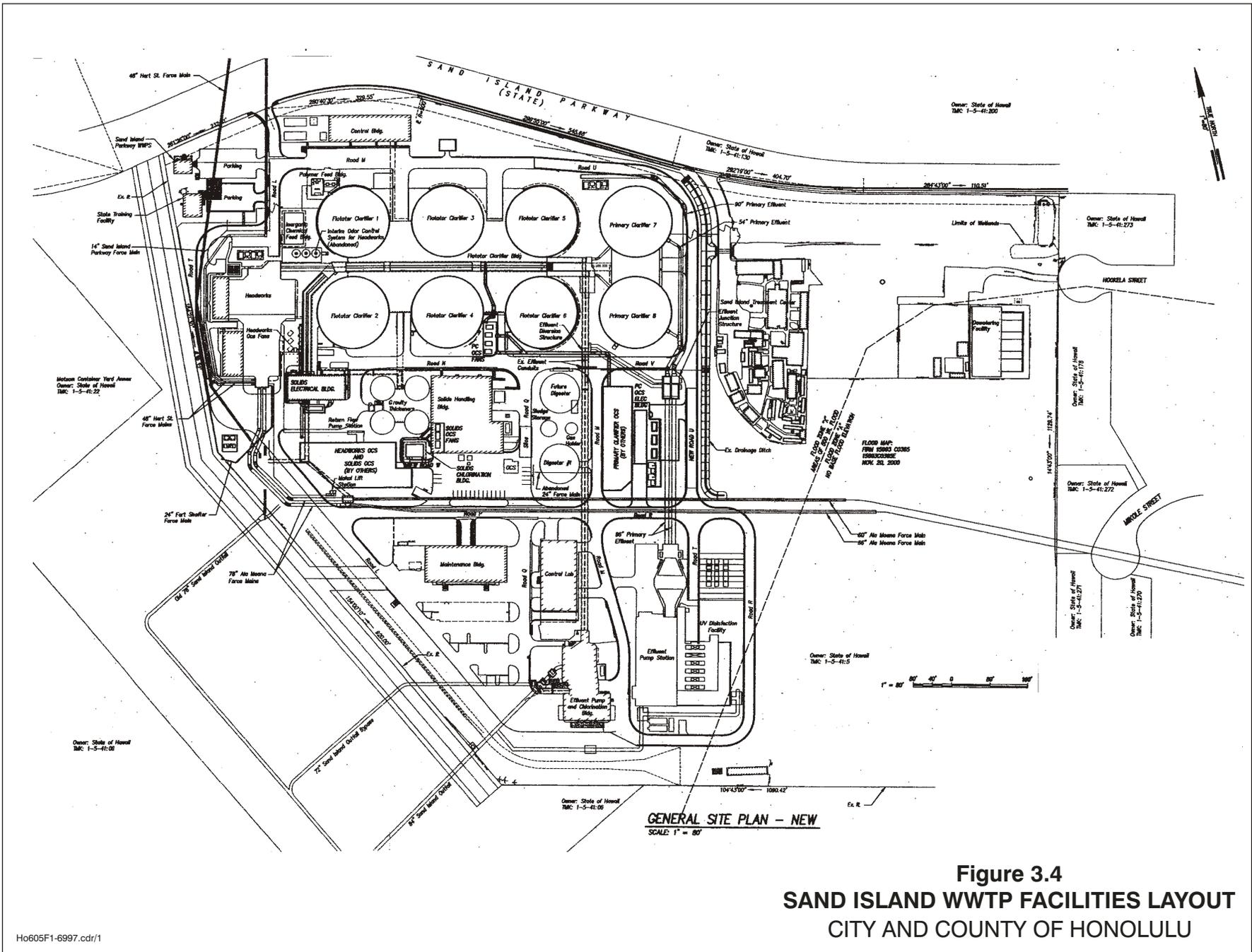
A facilities plan layout for the Kailua Regional WWTP is shown in Figure 3.7. The major facility project requirements identified for the planning horizon for the Kailua Regional WWTP include:

- Dewatering system modifications.
- Wet weather handling facility improvements.

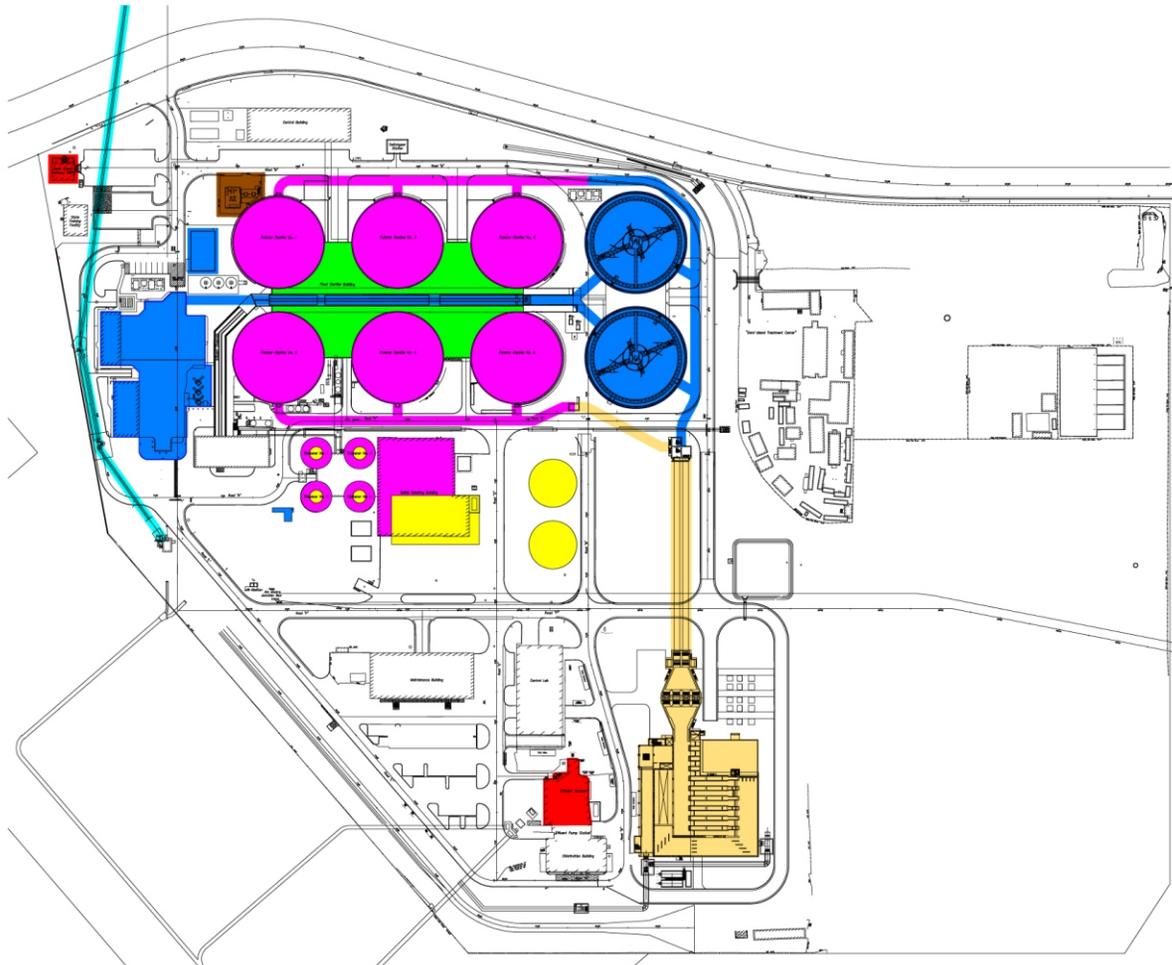
3.3 COST OF FUTURE PROJECTS

Estimated capital project costs for future facilities have been developed for each of the eight wastewater basins. The capital cost estimates include land acquisition, planning, design, construction, construction management, and all other costs required to deliver a completed project.

A summary of the historical and projected annual capital appropriations is shown in Figure 3.8. As shown in Figure 3.8, there was an increasing trend in annual capital project appropriations from 1998 through 2002, a moderation of appropriations from 2003 through 2005, and projected peaks in 2006 and 2007. Appropriations are expected to generally decrease from 2008 through 2017. This is primarily the result of a significant investment by the Department on treatment plant modifications to improve efficiencies, and in collection system improvements to reduce rainfall induced infiltration and inflow. These investments in capital facilities and associated improvements in efficiencies are anticipated to help keep operations and maintenance costs minimized. Specifically, a large increase in capital appropriations in 2006 is due, in part, to the rehabilitation and improvement requirements set forth in the Sand Island WWTP Permit.



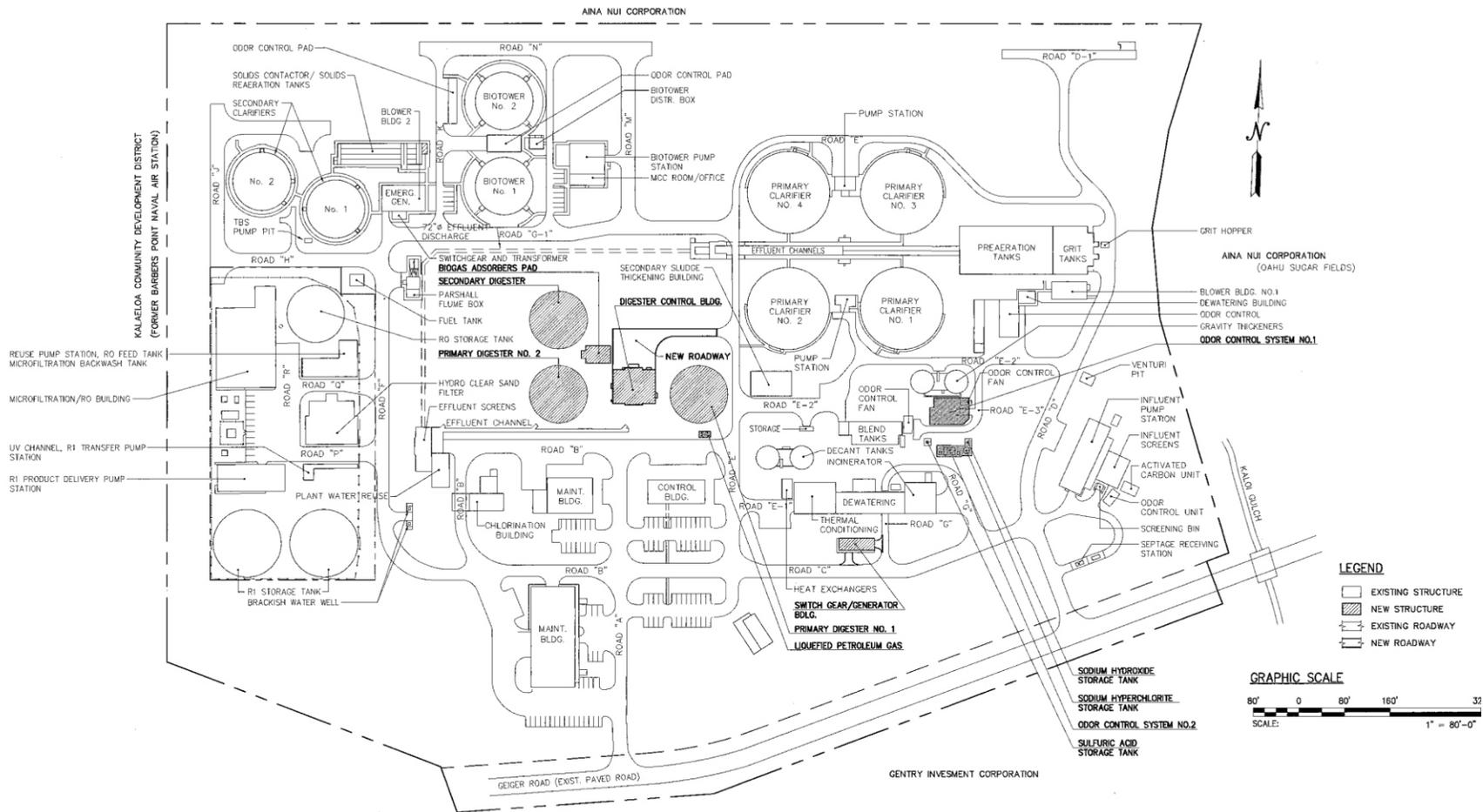
**SAND ISLAND WWTP
PRIMARY EXPANSION (90MGD)
AUGUST 2007**



SI WWTP EXPANSION: Conversion of the six existing clarifier tanks to gravity operation, refurbishing of the gravity thickeners and sludge holding tanks, odor control for the primary clarifiers and refurbished solids handling facilities.

	Sand Island Wastewater Treatment Plant (WWTP)	NOV 1998
	Hart Street WWPS Force Main Replacement	AUG 2001
	Sand Island WWTP - Repair EPS Discharge Lines	JAN 2002
	Sand Island WWTP - Interim Chemical Treatment Facility	FEB 2002
	Sand Island WWTP - Refurbish Flotator Clarifiers No. 1,2,5,6	DEC 2002
	Sand Island WWTP - Replace DAF Piping	DEC 2002
	Hart Street WWPS Alternative	SEP 2004
	Sand Island WWTP - Disinfection Facility and Effluent WWPS	OCT 2004
	Sand Island WWTP - In-Vessel Bioconversion Facility	NOV 2004
	Sand Island WWTP - Unit 1, Phase 2A (Headworks)	DEC 2004
	Sand Island Parkway WWPS Modification	FEB 2005
	Ala Moana WWPS Modification	FEB 2006
	Sand Island WWTP - Primary Expansion (90 MGD)	AUG 2007

**Figure 3.5
SAND ISLAND WWTP PRIMARY EXPANSION
CITY AND COUNTY OF HONOLULU**



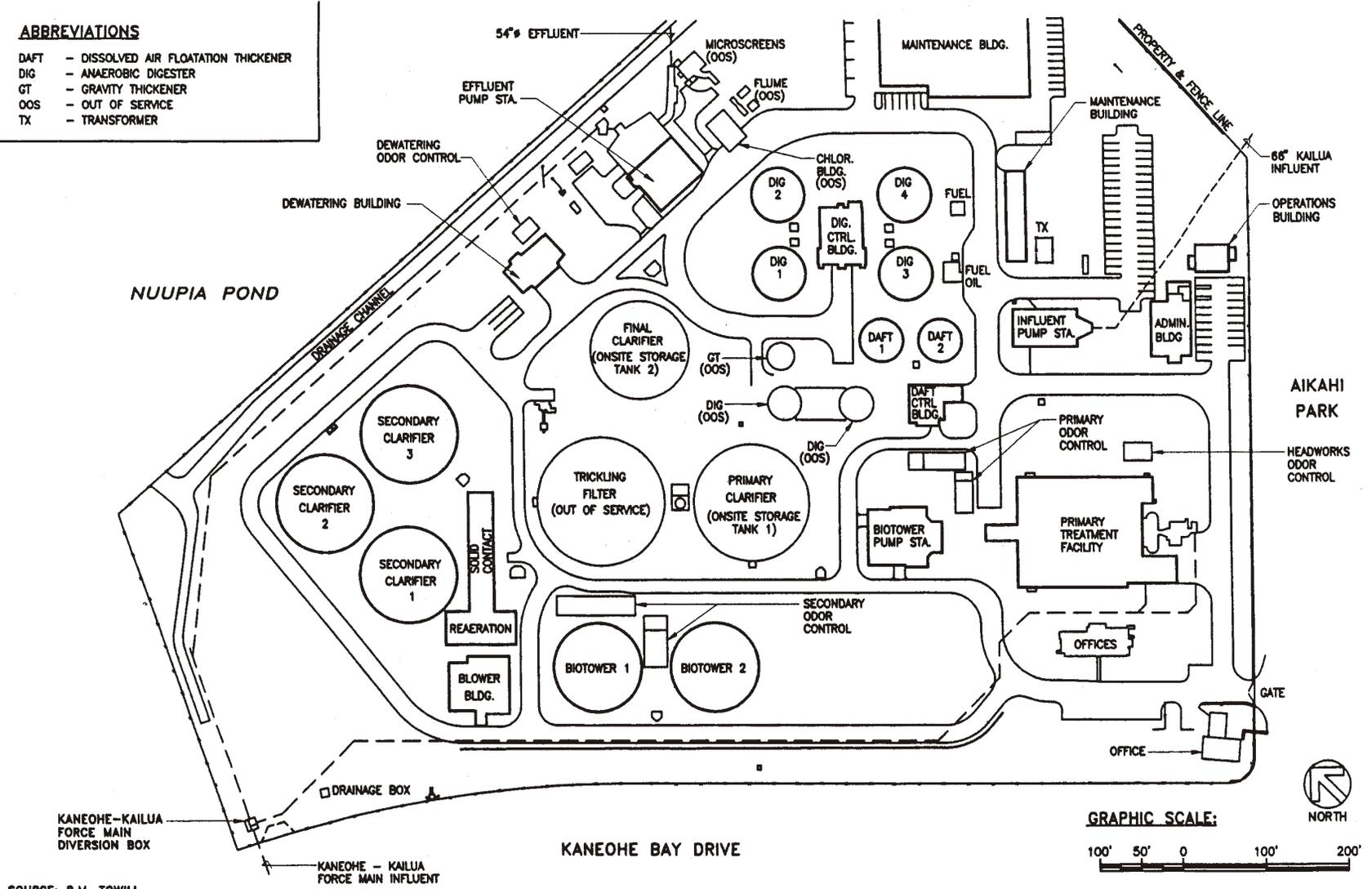
GENERAL CIVIL SITE PLAN
SCALE: 1"=80'-0"

(FOR INTERIOR MODIFICATIONS TO OTHER UNITS OR BUILDINGS, REFER TO PROJECT ORIENTATION PLAN, 0001)

Figure 3.6
HONOULIULI WWTP FACILITIES LAYOUT
CITY AND COUNTY OF HONOLULU

ABBREVIATIONS

- DAFT - DISSOLVED AIR FLOTATION THICKENER
- DIG - ANAEROBIC DIGESTER
- GT - GRAVITY THICKENER
- OOS - OUT OF SERVICE
- TX - TRANSFORMER



SOURCE: R.M. TOWILL

Figure 3.7
KAILUA WWTW FACILITIES LAYOUT
 CITY AND COUNTY OF HONOLULU

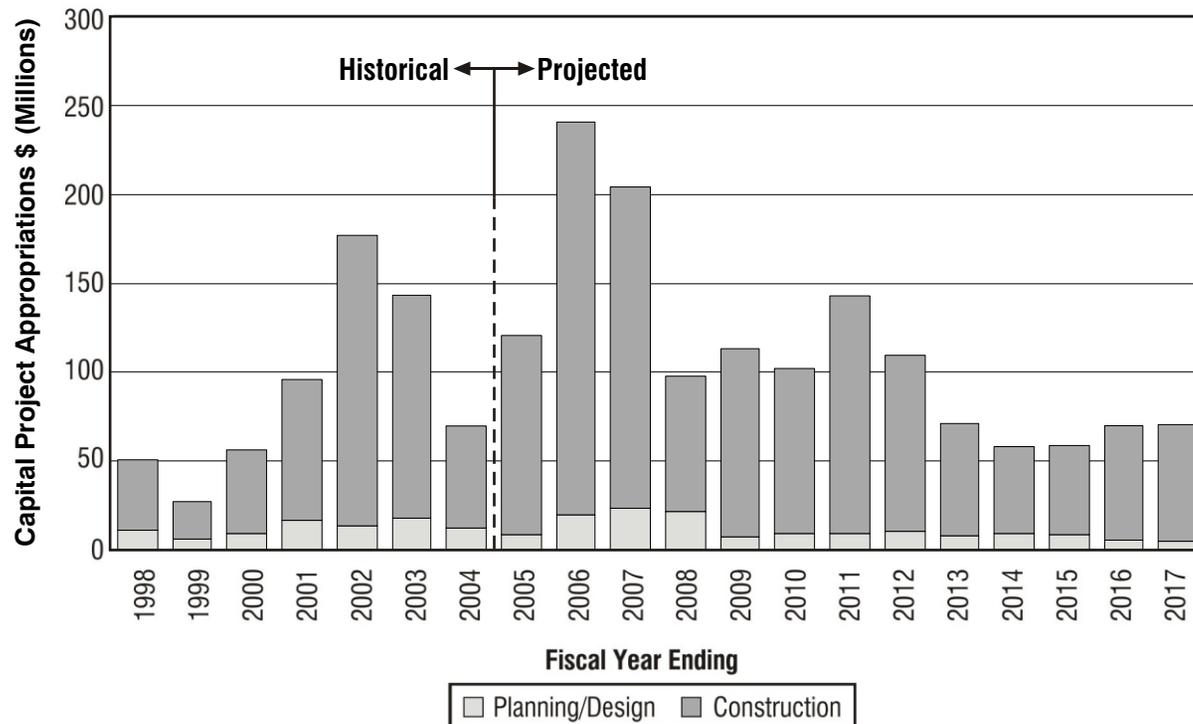


Figure 3.8
HISTORICAL AND PROJECTED
CAPITAL PROJECT APPROPRIATIONS
 CITY AND COUNTY OF HONOLULU

3.4 TIMING OF FUTURE PROJECTS

The implementation schedule for the 20-year CIP projects is presented in Figure 3.9. This implementation schedule shows the timing of major projects necessary to replace and rehabilitate deteriorated pipes, to accommodate increased wastewater flows and loadings due to anticipated growth, and to meet consent decree scheduled activities. As shown, some of the current CIP projects are already funded through planning and design.

Others will be funded from the proceeds of the Series 2005 bonds, the existing capital reserves, and future bond issues. Funding for the projects is discussed in Chapters 5 and 6.

3.5 GROWTH RATE CONSIDERATIONS

Projects associated with population growth and service expansion account for only 20 percent of the 20-year CIP total costs. Most of the 20-year CIP projects are driven by other factors such as consent decree requirements, rehabilitation and replacement of existing aging infrastructure, and public safety.

Category	Project	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Collection System Projects	Central Oahu Basin																	
	East Mamala Basin																	
	North Shore Basin																	
	Waianae Basin																	
	Waimanalo Basin																	
	West Mamala Basin																	
	Windward Basin																	
Major Pump Station Projects	Central Oahu Basin Pump Stations																	
	Ala Moana WWPS																	
	Aliamanu WWPS																	
	Awa Street WWPS																	
	Beachwalk WWPS																	
	Ft. Derussy WWPS																	
	Hart Street WWPS																	
	Kamehameha Highway WWPS																	
	Kuliouou WWPS																	
	Moana Park WWPS																	
	Niu Valley WWPS																	
	Paiko Drive WWPS																	
	Ewa Beach WWPS																	
	Kunia, Waipahu WWPS																	
	Pearl City WWPS - New																	
	Waipio WWPS																	
	Heeia WWPS																	
Windward Basin Pump Stations																		
Treatment Plant Facility Projects	Wahiawa WWTP																	
	Sand Island WWTP, Construction Soil Management																	
	Sand Island WWTP, Disinfection Facility Improvements																	
	Sand Island WWTP, Outfall Study																	
	Sand Island WWTP, Primary Treatment 90 mgd																	
	Sand Island WWTP, Unit 1-2A Headworks																	
	Haleiwa WWTP																	
	Hauula/Punaluu WWTP																	
	Kaaawa WWTP																	
	Pupukea/Sunset WWTP																	
	Waianae WWTP																	
	Waimanalo WWTP																	
	Honouliuli WWTP Upgrade																	
	Honouliuli WWTP, Process Lab																	
	Honouliuli WWTP, Solids Handling System																	
	Mililani WWPTF, Storage and Headworks																	
	Ahuimanu WWPTF																	
	Kailua WWTP																	
	Kailua WWTP Dewatering System Modifications																	
Kailua WWTP Outfall Study																		
Kaneohe WWPTF																		

LEGEND

-  Design
-  Construction
-  Completed

**Figure 3.9
20-YEAR PROJECT
IMPLEMENTATION SCHEDULE
CITY AND COUNTY OF HONOLULU**

CURRENT AND FUTURE SEWER SERVICE AND SYSTEM FACILITY CHARGES

Sewer service charges and system facility charges are levied by the City and County of Honolulu to fund the major costs associated with capital improvements and operation and maintenance of the wastewater system. This chapter addresses the current and future charges.

4.1 SOURCES AND USES OF FUNDS

The City and County of Honolulu's Department of Environmental Services revenues are currently derived from three major sources: monthly sewer service charges, system facility charges, and interest earned on fund balances. Of these, sewer service charges are the major source of revenue. The summary of the two sources of funding from system users and uses of these funds is shown in Table 4.1.

Table 4.1 User Revenues - Sources and Uses 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu		
Source of Funds	Who Pays	Use of Funds
Sewer Service Charges	Existing Users	<ul style="list-style-type: none"> • O&M Costs for Existing Facilities • Replacement of Existing Facilities • Construction to Improve Treatment
System Facility Charges	New Users	<ul style="list-style-type: none"> • Construction to Accommodate Growth • Construction to Improve Treatment

In the past, property taxes were used to cover annual debt service on general obligation bonds incurred for capital construction costs of wastewater facilities. However, the City and County made the decision in 1993 to recover all wastewater debt costs through user charges. Wastewater revenues currently fund all annual debt service on previously issued reimbursable General Obligation Bonds allocated to wastewater, and the City Council's policy is to not fund any new wastewater capital improvements directly through property taxes or with general obligation bonds.

State Revolving Fund (SRF) proceeds have been a reliable source of funding for wastewater projects, including \$10 million in loans in FYE 2003 and an expected \$55 million in loans in FYE 2005, as shown in Table 4.2. The SRF proceeds are anticipated to continue, with commitments of \$10 million annually through fiscal year ending (FYE) 2017 as shown in Table 5.1 in Chapter 5.

**Table 4.2 Historical Wastewater Revenues and Expenditures⁽¹⁾
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu**

Fiscal Year Ending	Actual				Budget
	2001	2002	2003	2004	2005
<u>ESDUs Served</u>					
Residential ESDUs at Start of Year	202,333	203,615	204,897	206,613	209,113
Non-Residential ESDUs, Start of Year	77,740	77,786	77,832	77,967	77,986
Total ESDUs at Start of Year	280,073	281,401	282,729	284,580	287,099
Residential New ESDUs Added	1,531	1,353	1,716	2,500	n/a
Non-Residential New ESDUs Added	46	36	135	19	n/a
Total New ESDUs Added (2)	1,577	1,389	1,851	2,519	
<u>Charges</u>					
Average Monthly Sewer Service Charge (3)	\$36.45	\$33.05	\$33.05	\$33.05	\$33.05
% Increase over Prior Year	0.00%	0.00%	0.00%	0.00%	0.00%
System Facility Charge	\$1,146	\$1,146	\$1,146	\$4,641	\$4,641
% Increase over Prior Year	0%	0%	0%	305%	0%
<u>Estimated Cash Flow and Coverage</u>					
(Dollars in Millions)					
Revenue					
Sewer Service Charges	\$111.6	\$112.1	\$111.9	\$111.9	\$113.0
System Facility Charges	1.4	1.6	3.8	3.1	6.3
Other Revenues (4)	7.4	4.8	2.1	1.6	5.4
Total Revenues	\$120.4	\$118.6	\$117.8	\$116.6	\$124.6
O&M Expenses					
Direct Expenses	\$44.1	\$44.7	\$47.2	\$46.7	\$54.6
Indirect Expenses	16.4	18.2	17.0	18.5	20.5
Total O&M Expenses	\$60.5	\$62.9	\$64.2	\$65.2	\$75.1
Net Revenues	\$59.9	\$55.7	\$53.6	\$51.4	\$49.5
Total Debt Service	\$34.8	\$29.8	\$35.3	\$33.6	\$44.4
Capital Project Financing					
Capital Expenditures	\$74.8	\$75.5	\$104.2	\$99.0	\$125.1
Revenue Bonds - Senior Lien	0.0	125.0	0.0	0.0	0.0
Revenue Bonds - Junior Lien	0.0	0.0	180.0	0.0	0.0
SRF Loan Proceeds	8.5	2.5	10.0	0.0	55.4

**Table 4.2 Historical Wastewater Revenues and Expenditures⁽¹⁾ (Cont.)
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu**

(Dollars in Millions) Fiscal Year Ending	Actual				Budget
	2001	2002	2003	2004	2005
Fund Balances (beginning of following fiscal year)					
Sewer Fund Operating Reserve	\$15.1	\$15.7	\$16.0	\$16.3	\$18.8
Reserved for Debt Service (5)	\$13.1	\$18.6	\$16.8	\$22.2	\$23.3
Common Reserve	\$26.5	\$35.9	\$0.0	\$0.0	\$0.0
Unreserved Fund Balance (6)	\$80.9	\$51.1	\$32.1	\$19.2	\$11.4
Total Beginning Balance	\$135.6	\$121.3	\$64.9	\$57.7	\$53.5

Notes:

- (1) Does not include Hawaii Kai, a privately owned and operated facility.
- (2) Does not reflect ESDUs changed or removed.
- (3) Decrease in average monthly sewer service charge due to water conservation measures.
- (4) Includes connection services, lateral installation charges, other, and interest.
- (5) Bond reserve set at 50% of following year's debt service obligation.
- (6) Sewer fund reserve based upon maintaining 3 months of operating expenses. Excess / (shortfall) applied to unrestricted reserve.

Sewer service charges and system facility charges fund the major portion of costs incurred by the Department. The major cost components funded by sewer service charges and system facility charges are as follows:

- Operation and maintenance of wastewater treatment plants (WWTPs) and collection system facilities including pumping and cesspools.
- Planning, design, and construction of capital projects for rehabilitation, improvement, and expansion.
- Annual debt service for obligations incurred for construction of existing facilities.
- Maintenance of appropriate reserves.

System facility charge revenues are used to partially fund capital projects. The City and County of Honolulu currently maintains Sewer Fund (#170), with an ending funding balance for FYE 2004 of \$56,986,000, as reported in the June 30, 2004 Certified Annual Financial Report. This fund is available for operations and wastewater capital costs.

Interest earned on reserves is available to pay debt service and is retained in the respective reserve or used as appropriate.

Monthly sewer service charges fund operation and maintenance costs and debt service on non-growth related CIP costs.

4.2 HISTORICAL REVENUES AND EXPENDITURES

A four-year summary of historical revenues and expenditures is shown in Table 4.2. Until recently sewer service charges had been held constant since July 1, 1993. New connections have averaged approximately 1,585 equivalent single-family dwelling units (ESDUs) per year between FYE 1999 and 2003.

4.3 EXISTING RATES AND CHARGES

Sewer service charges had been held constant since July 1, 1993. As part of 6-year rate increase package adopted by the City and County Council, single-family residential rates will increase by 25 percent, beginning July 1, 2005. Sewer service charges will then increase by 10 percent annually through FYE 2011. This rate package is significant. It provides the Department with a funding mechanism to accomplish its capital improvement needs and meet its debt service requirements through FYE 2011. Beginning July 1, 2005 an average single-family residential customer will be charged \$41.31 per month for service. Tables 4.3 and 4.4 provide sewer service charge rates as approved by the City Council. Rates for military customers who have prepaid capital contributions are slightly lower and a surcharge is added for customers in the Kalaeloa Community Development District.

Wastewater system facility charges were increased in FYE 2004 from \$1,146 to \$4,641 per ESDU, and the City and County Council recently adopted a 3 percent annual escalator per ESDU beginning in FYE 2006 through FYE 2011. The wastewater system facility charge for FYE 2006 will be \$4,780.

Table 4.3 Residential Sewer Service Charges 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu			
Effective July 1 of:			
Single-family and duplex dwellings served by city water system per dwelling unit per month:			
1. Monthly base charge	2005		\$31.06
	2006		34.17
	2007		37.59
	2008		41.34
	2009		45.84
	2010		50.03
2. Monthly usage charge--First 2,000 gallons of metered water consumed	2005		No charge

Table 4.3 Residential Sewer Service Charges 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu		
Effective July 1 of:		
3. Charge per 1,000 gallons of metered water consumed over 2,000 gallons, the water consumed reduced by the water irrigation factor of 18%; provided that residential users who install and maintain a water meter for submetering nonsewer water shall not have the water consumed reduced by the water irrigation factor	2005	\$1.31
	2006	1.44
	2007	1.59
	2008	1.75
	2009	1.92
	2010	2.11
Single-family and duplex dwellings not served by city water system per dwelling unit per month	2005	\$42.06
	2006	46.27
	2007	50.90
	2008	55.99
	2009	61.58
	2010	67.74
Multiple-unit dwellings served by city water system per dwelling unit per month		
1. Monthly base charge	2005	\$21.75
	2006	23.93
	2007	26.32
	2008	28.95
	2009	31.84
	2010	35.03
2. Monthly usage charge--First 2,000 gallons of metered water consumed	2005	No charge
3. Charge per 1,000 gallons of metered water consumed over 2,000 gallons, the water consumed reduced by the water irrigation factor of 18%; provided that residential users who install and maintain a water meter for submetering nonsewer water shall not have the water consumed reduced by the water irrigation factor	2005	\$1.31
	2006	1.44
	2007	1.59
	2008	1.75
	2009	1.92
	2010	2.11

Table 4.3 Residential Sewer Service Charges 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu		
Effective July 1 of:		
Multiple-unit dwellings not served by city water system per dwelling unit per month	2005	\$29.44
	2006	32.38
	2007	35.62
	2008	39.18
	2009	43.10
	2010	47.41

Table 4.4 Non-Residential Sewer Service Charges 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu		
Effective July 1 of:		
Domestic Strength Wastewater:		
1. Metered Water Usage:		
a. If 9,000 gallons or less per month:		
(1) Monthly base charge:	2005	\$27.94
	2006	30.73
	2007	33.80
	2008	37.18
	2009	40.90
	2010	44.99
(2) Charge per 1,000 gallons:	2005	\$0.16
	2006	0.18
	2007	0.20
	2008	0.22
	2009	0.24
	2010	0.26
2. Metered Wastewater Discharge:		
a. If 7,000 gallons or less per month:		
(1) Monthly base charge:	2005	\$27.94
	2006	30.73
	2007	33.80
	2008	37.18

Table 4.4 Non-Residential Sewer Service Charges 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu			
Effective July 1 of:			
(1) Monthly base charge (cont.):	2009	40.90	
	2010	44.99	
(2) Charge per 1,000 gallons:	2005	\$0.20	
	2006	0.22	
	2007	0.24	
	2008	0.27	
	2009	0.29	
	2010	0.32	
b. If more than 7,000 gallons per month, charge per 1,000 gallons	2005	\$3.90	
	2006	4.29	
	2007	4.72	
	2008	5.19	
	2009	5.71	
	2010	6.28	
Extra Strength Wastewater			
1. Charge per 1,000 gallons of water usage, use the following formula: 0.857 + 0.143(SSm/200) multiplied by applicable rate	2005	\$3.11	
	2006	3.42	
	2007	3.77	
	2008	4.14	
	2009	4.56	
	2010	5.01	
2. Charge per 1,000 gallons of wastewater discharge, use the following formula: 0.857 + 0.143(SSm/200) multiplied by applicable rate	2005	\$3.90	
	2006	4.29	
	2007	4.72	
	2008	5.19	
	2009	5.71	
	2010	6.28	

4.4 COMPARISON WITH RATES CHARGED BY OTHER AGENCIES

Several considerations are important when making sewer service charge and system facility charge comparisons for the City and County of Honolulu with other agencies. These considerations include the following:

- Economies of scale are difficult to achieve due to small service areas.
- Historically, system facility charges have been low.
- Equipment costs are high due to the remote location of the island from major suppliers.
- Electricity costs on the island are high.
- Remote facilities and rough terrain add to system complexity and cost.

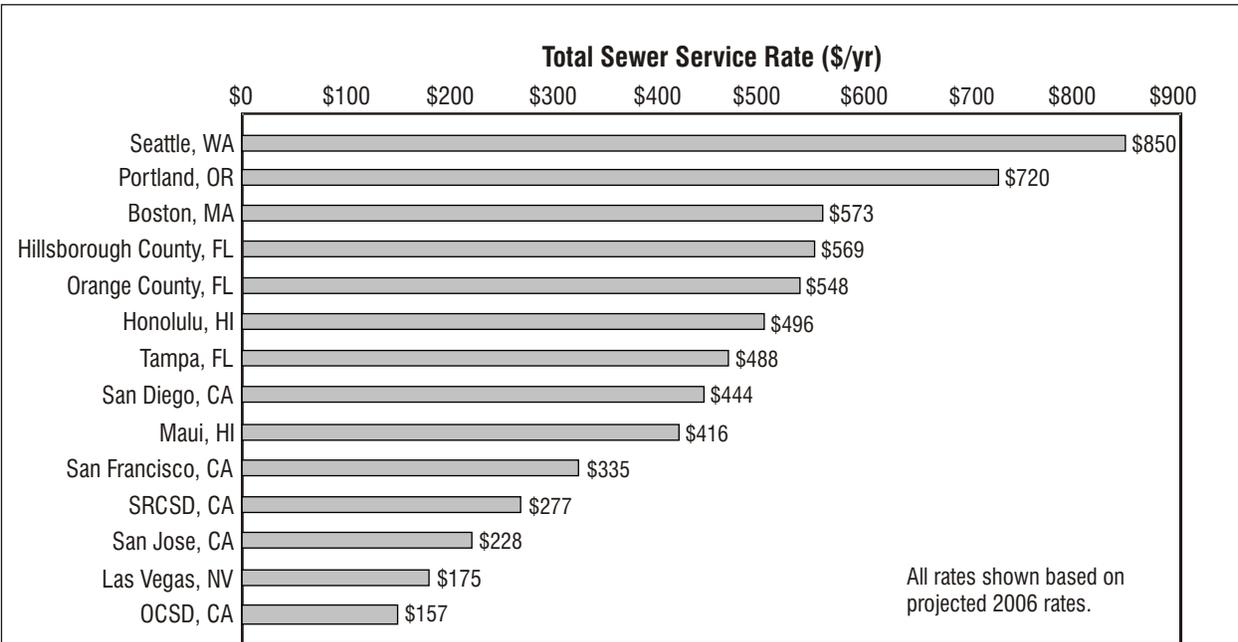
The harsh salt water environment increases ongoing maintenance costs, reduces useful life of facilities, and leads to excessive infiltration and inflow conditions due to the accelerated deterioration of collection systems.

A comparison of the single family monthly sewer service charge and system facility charge of the City and County of Honolulu to those charges and fees of other similar agencies throughout the United States is presented in Figures 4.1 and 4.2. These comparisons are made on an equivalent cost basis and take into consideration local agency charges for collection systems as well as property tax revenues in addition to the monthly user rate.

4.5 PROJECTED RATES AND CHARGES

Historical and projected sewer service and system facility charges (based upon adopted rate increases) are presented in Figure 4.3. Sewer service charges had been the subject of considerable public discussion since 1993. Concern had been voiced regarding the unlimited inclusion of water use in the volume component of the charge. In response, the Department performed an evaluation of the rate structure, including a consultant study and a series of public meetings, and recommended a revenue neutral revision to the rate structure to address the irrigation water issue and increase fairness. Throughout this process, and in numerous other public outreach settings, the Department identified the need for future rate increases to support necessary measures to provide appropriate service and ensure public health.

Revenues from system facility charges represent a minor proportion of revenues in comparison to sewer service charges, as reflected in Figure 4.4.



Average household; All rates and charges shown based on actual FY 2005 rates except for Honolulu and Maui which are projected FY 2006 rates.

Figure 4.1
COMPARISON OF RESIDENTIAL SEWER SERVICE CHARGES
CITY AND COUNTY OF HONOLULU

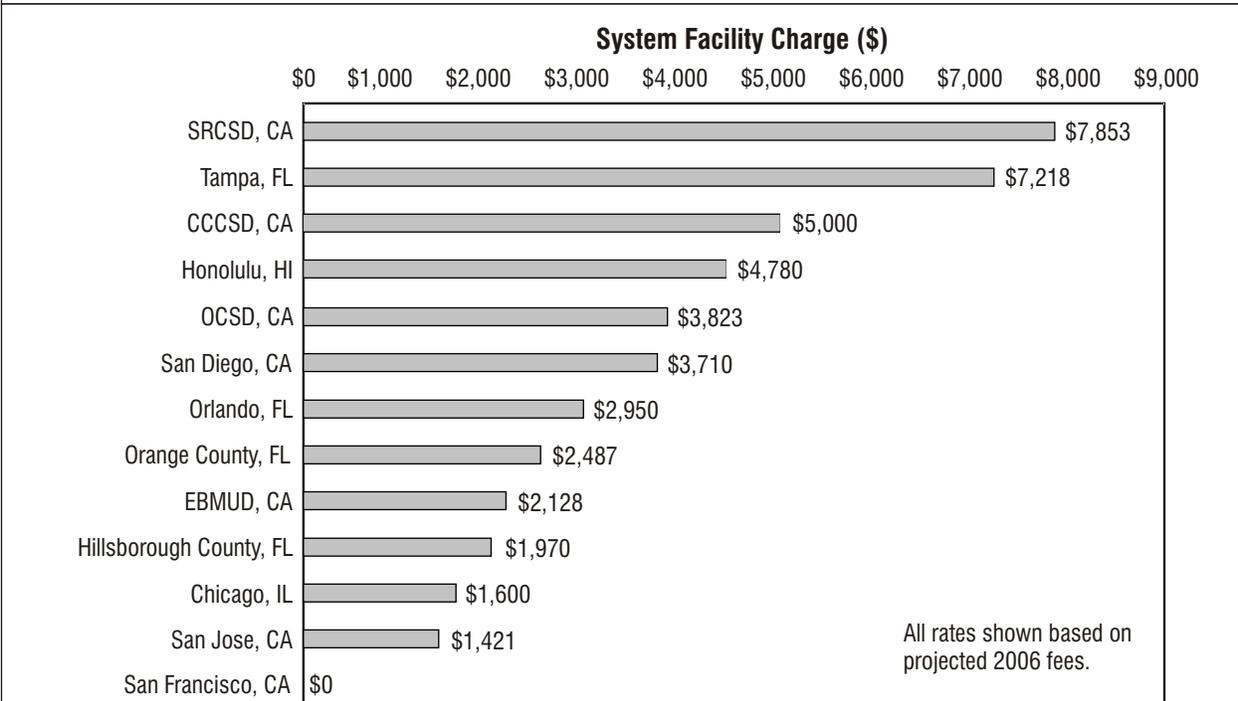
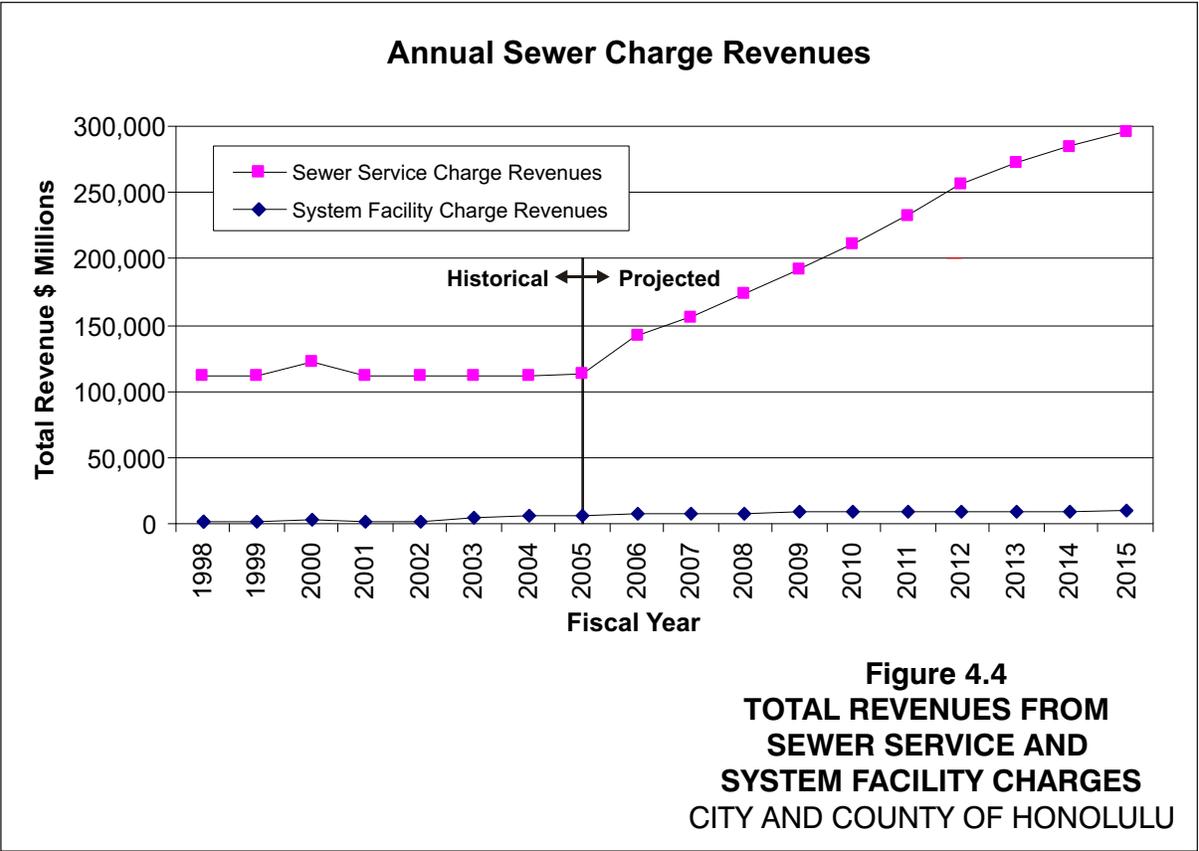
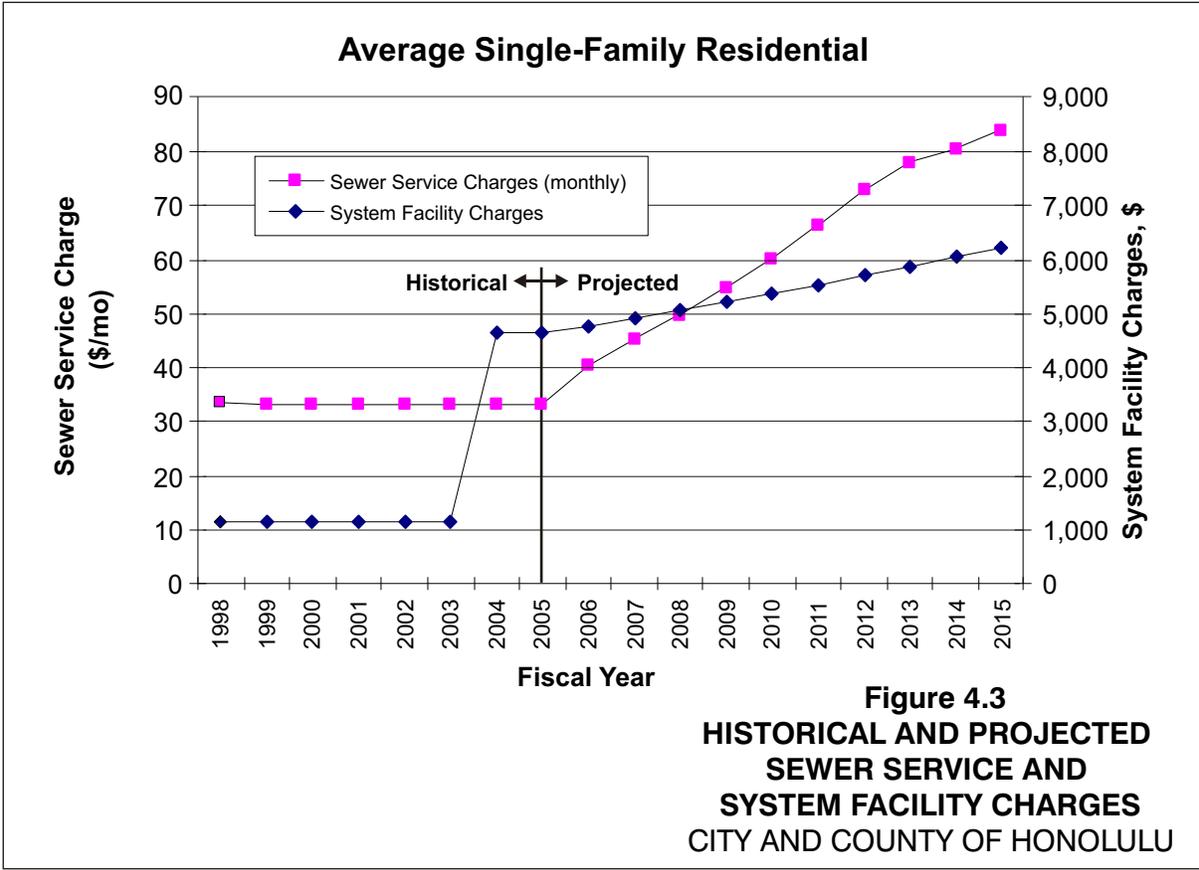


Figure 4.2
COMPARISON OF RESIDENTIAL SYSTEM FACILITY CHARGES
CITY AND COUNTY OF HONOLULU



In 1998, the City Council adopted a set of Debt and Financial Policies for its wastewater system that require, among other things, the City to maintain a 1.60 times coverage for its Senior Revenue bonds. It is expected that the City will adopt annual increases in sewer service and system facility charges necessary to meet the debt service coverages prescribed in its Debt and Financial Policies. The City has adhered to the Debt and Financial policies in the previous years and met all stated goals.

In addition to ensuring the financial strength of the Wastewater System, the administration is equally committed to managing the System in as efficient and affordable manner as possible while maintaining the highest environmental standards and meeting all regulatory requirements. As a part of that commitment, the Administration also supported Ordinance No. 05-006, a pledge to not transfer Sewer Fund monies to the City's General Fund, which was adopted by City Council on March 31, 2005.

SUMMARY OF PROJECTED REVENUES AND EXPENSES

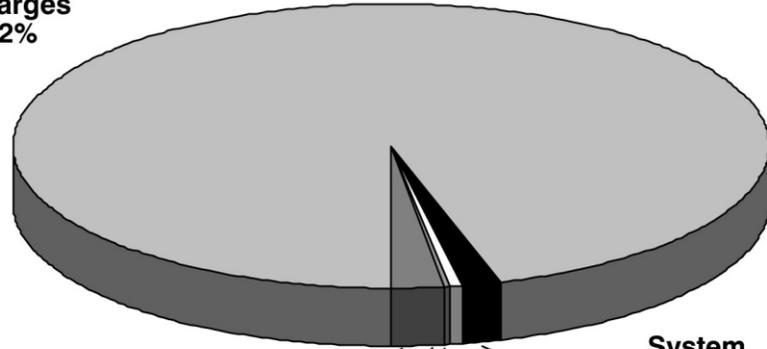
A ten year projection through fiscal year ending (FYE) 2015 for the City and County of Honolulu Department of Environmental Service's operations has been prepared and is presented in Table 5.1. As shown in Table 5.1, sewer service charges are projected to be the major source of revenues to cover debt service, as has been the case in the past (see Figure 5.1).

The principal assumptions underlying these projections follow:

- Growth in equivalent single-family dwelling units (ESDUs) is assumed to occur at 1,600 per year through FYE 2015. The majority of the growth in ESDUs is projected to be residential, as is the current customer base.
- Capital expenditures are assumed to be required and made as reflected in Table 5.1 to meet consent decree milestones and accommodate modest population growth as projected in the City and County of Honolulu 1992 General Plan.
- Interest earnings on fund balances are assumed at 3.0 percent.
- Debt service reserve requirements will be met with surety bonds funded from revenue bond proceeds.
- Debt service on all future revenue bonds issues is assumed at an all-in interest cost of 5.5 percent, and the bond repayment period for all future issues is assumed to be 30 years. All future revenue bond issues to fund the Capital Improvement Plan (CIP) are assumed to be issued on parity with the Series 2005 Bonds.
- Bond issuance costs are estimated at 1.2 percent of net bond proceeds.
- Unrestricted reserve balances are maintained at levels indicated in the projections.
- Rate increases, as identified in Table 5.1, have been adopted through FYE 2011 and are assumed to be made thereafter by the City Council on a timely basis to produce the incremental revenues projected herein.
- Inflation of capital expenditures and operations and maintenance (O&M) costs is assumed at 3.0 percent per annum for all categories including labor.
- No increases above inflation of operation and maintenance costs are expected. Any additional facilities will be served at existing or lower staffing levels as discussed in Chapter 2, while maintaining effective facility performance.
- Discharge characteristics from existing customers will not vary significantly from the values identified on the various wastewater facilities plans.

Total = \$128 Million

**Sewer Service
Charges
95.2%**



**Interest
2.3%**

**Other
0.1%**

**Cesspool
Services
0.6%**

**System
Facility
Charges
1.8%**

**Figure 5.1
REVENUE SOURCES
FISCAL YEAR ENDING 2004
CITY AND COUNTY OF HONOLULU**

Table 5.1 10-Year Projected Cash Flow Summary 2005 Wastewater System Revenue Bonds Engineer's Report City and County of Honolulu											
Fiscal Year Ending	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Growth Assumptions											
Total ESDUs at Start of Year	287,002	288,602	290,202	291,802	293,402	295,002	296,602	298,202	299,802	301,402	
Total New ESDUs added	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	16,000
(Dollars in Millions)											
Revenues											
Sewer Service Charges (1)	\$142.7	\$157.4	\$173.6	\$191.5	\$211.2	\$233.0	\$257.0	\$273.2	\$284.9	\$297.1	\$2,221.4
System Facility Charges (1)	\$7.7	\$7.9	\$8.1	\$8.4	\$8.6	\$8.9	\$9.1	\$9.4	\$9.7	\$10.0	\$87.7
Interest on Sewer Reserve Fund and Unreserved Fund (1)	\$1.3	\$3.1	\$3.8	\$4.2	\$4.6	\$4.7	\$5.3	\$5.9	\$6.2	\$7.0	\$46.1
Other Revenues (2)	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.6
Total Revenues	\$151.7	\$168.4	\$185.6	\$204.1	\$224.5	\$246.6	\$271.5	\$288.5	\$300.8	\$314.1	\$2,355.7
Operating Expenses											
O&M Costs (3)	\$89.7	\$90.2	\$92.9	\$95.6	\$99.4	\$102.6	\$106.2	\$109.4	\$112.7	\$116.0	\$1,014.6
Total Expenses	\$89.7	\$90.2	\$92.9	\$95.6	\$99.4	\$102.6	\$106.2	\$109.4	\$112.7	\$116.0	\$1,014.6
Total Net Revenues	\$62.0	\$78.2	\$92.7	\$108.5	\$125.1	\$144.0	\$165.3	\$179.1	\$188.1	\$198.1	\$1,341.1
Debt Service											
2005 Sr. Bonds and Future Sr. Revenue Bond Debt Service (4)	\$0.0	\$10.2	\$19.9	\$32.0	\$40.8	\$47.8	\$56.2	\$66.0	\$75.1	\$82.2	\$430.2
Previous Sr. Revenue Bond Debt Service	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	129.5
Previous Jr. Revenue Bond Debt Service (4)	22.6	22.6	27.4	28.2	30.0	32.6	37.0	38.6	38.4	38.4	315.9
Reimbursable G.O. Debt Service	3.0	2.2	0.9	0.6	0.4	0.3	0.0	0.0	0.0	0.0	7.3
SRF Loans (Existing and Future)	10.5	13.2	13.9	14.5	15.2	13.2	16.5	17.2	16.4	14.3	145.0
Total Debt Service	\$46.6	\$61.3	\$75.0	\$88.6	\$100.1	\$107.5	\$125.7	\$137.7	\$145.9	\$151.0	\$1,039.2
Total Net Revenues Available for Other Requirements	\$15.4	\$16.9	\$17.7	\$19.9	\$25.0	\$36.5	\$39.6	\$41.4	\$42.3	\$47.1	\$301.9

Table 5.1 10-Year Projected Cash Flow Summary (Continued)
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu

Fiscal Year Ending	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Sr. Revenue Bond Coverage Ratio (5)	4.20	3.04	2.57	2.23	2.17	2.22	2.26	2.15	2.03	1.98	4.20
Total Revenue Bond Coverage Ratio (5)	1.53	1.54	1.40	1.37	1.39	1.45	1.47	1.44	1.41	1.41	1.53
Total Debt Coverage Ratio (5)	1.11	1.15	1.13	1.13	1.17	1.26	1.27	1.26	1.25	1.27	1.11
(Dollars in Millions)											
Capital Project Financing											
Transfer to CIP from Sewer Fund	\$0.0	\$0.0	\$0.0	\$0.0	\$19.9	\$25.0	\$36.5	\$39.6	\$41.4	\$42.3	\$204.7
SRF Loan Proceeds	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	100.0
Net Revenue Bond Proceeds	140.0	160.0	200.0	170.0	100.0	100.0	110.0	110.0	100.0	60.0	1,250.0
Net CIP Financing	\$150.0	\$170.0	\$210.0	\$180.0	\$129.9	\$135.0	\$156.5	\$159.6	\$151.4	\$112.3	\$1,554.7
Capital Expenditures	\$107.5	\$161.5	\$216.8	\$186.3	\$131.1	\$127.3	\$138.7	\$150.6	\$125.1	\$93.3	\$1,438.2
Major Reserves & Funds (end of year)											
Unrestricted Reserve Balance	\$15.3	\$25.1	\$35.3	\$48.9	\$48.9	\$50.6	\$46.9	\$43.8	\$41.3	\$42.8	
Sewer Fund Operating Reserve (6)	\$22.4	\$22.6	\$23.2	\$23.9	\$24.9	\$25.6	\$26.5	\$27.3	\$28.2	\$29.0	
Bond Reserve (7)	\$31.1	\$38.1	\$45.0	\$50.7	\$54.7	\$63.8	\$69.7	\$73.8	\$76.3	\$78.9	
CIP Project Fund	\$33.2	\$41.8	\$35.0	\$28.7	\$27.5	\$35.2	\$52.9	\$61.9	\$88.2	\$107.2	
Projected Charges											
Monthly Sewer Service Charge (8)	\$41.31	\$45.44	\$49.99	\$54.99	\$60.49	\$66.54	\$73.19	\$77.58	\$80.68	\$83.91	
Increase over prior year	25.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	6.00%	4.00%	4.00%	
System Facility Charge	\$4,780	\$4,923	\$5,071	\$5,223	\$5,380	\$5,541	\$5,707	\$5,878	\$6,054	\$6,236	
Increase over prior year	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	

Table 5.1 10-Year Projected Cash Flow Summary (Continued)
2005 Wastewater System Revenue Bonds Engineer's Report
City and County of Honolulu

Fiscal Year Ending	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
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Notes:

- (1) Revenues from Sewer Service Charges, Facility Charges and Interest are as budgeted FYE 2006. Revenues are calculated for FYE 2007 and beyond based on adopted and projected rate increases.
- (2) Includes connection services, lateral installation, misc. state funding, and other revenues.
- (3) Includes all operating expenses: salaries, non-salary personnel costs, administrative support, equipment, general fund rental and other expenses.
- (4) Includes take-out of commercial paper in 2005.
- (5) Revenues for coverage calculations do not include system facility charges.
- (6) Sewer fund reserve based upon maintaining 3 months of operating expenses. Excess/(shortfall) applied to unrestricted reserve.
- (7) Bond reserve set at 50% of following year's debt service obligation.
- (8) Sewer service charges through FYE 2011 based on adopted rate increases. FYE 2012 and beyond charges are calculated based upon projected rate increases.

- No catastrophic events resulting from natural or human causes will occur that will have a substantial adverse impact on the integrity of the City and County of Honolulu's wastewater facilities or the activities of their customers.

As noted earlier, in 1998, the City Council adopted a set of Debt and Financial Policies for its wastewater system that target, among other things, the City to maintain a 1.60 times coverage for its Senior Revenue Bonds and 1.25 times coverage for all Revenue Bonds (Senior and Junior). It is expected that the City will adopt annually increases in sewer services charges necessary to meet the debt service coverages prescribed in its Debt and Financial Policies. Current projections show that the debt service coverages will be achieved by: 1) increasing sewer service charges 25 percent in FYE 2006 and between 4 and 10 percent thereafter through FYE 2015; and 2) increasing system facility charges 3.0 percent annually beginning in FYE 2006.

In addition, a sensitivity analysis was performed to determine the impact of low and high growth projections on the required monthly service charges and coverage ratios. Growth is projected to occur at 1,600 ESDUs per year from FYE 2006 through the duration of the study. This assumption is reasonable based on recent growth. Between FYE 2000 and 2004, the system experienced an average growth rate of 1,789 new connections per year. Should growth increase, several projects may have to be accelerated in the implementation schedule. The CIP program will accommodate an additional 20 percent of flow above current levels. While projected ESDU growth assumed for purposes of estimating annual revenues is only 40,000 ESDUs, or 15 percent of the existing number of ESDUs, any additional growth, up to 55,000 ESDUs over the 20-year period, will be accommodated by the planned projects and would only add to estimated revenues. Based on this analysis, the City and County of Honolulu will continue to comply with its Debt and Financial Policies.

CONCLUSIONS

Based upon our studies, the assumptions discussed in this report, and our review of the data and analysis provided by the City and County of Honolulu and its consultants, we conclude the following:

6.1 COMPLIANCE WITH DISCHARGE REQUIREMENTS

The CIP includes improvements to the City and County of Honolulu's Wastewater System collection and pumping facilities to assure compliance with current and anticipated federal and state regulatory requirements. These collection and pumping facilities constitute much of the need for capital facility improvements.

Completion of the Capital Improvement Plan (CIP) projects described in this report will permit the City and County of Honolulu to remain in compliance with all federal, state, and local regulations regarding treatment and discharge as described in the current National Pollutant Discharge Elimination System (NPDES) permit and consent decrees.

6.2 20-YEAR CIP

An estimated \$1.88 billion in 2005 dollars of non-discretionary CIP project expenditures for various treatment, collection, and other facilities are required to be constructed during the 20-year CIP program. This is to eliminate the current and projected critical deficiencies, to meet consent decree milestones, and to provide a wastewater system in a satisfactory operating condition based on projected wastewater usage and environmental and other regulatory requirements. The remaining approximately \$0.24 billion in 2005 dollars of CIP projects are discretionary, and have been identified primarily to improve wastewater treatment and collection systems efficiency. These CIP project expenditures are to be funded from proceeds of bonds, including the Series 2005 Bonds, and from net revenues and other charges.

The \$2.1 billion of CIP expenditure is technically sound and conforms with good engineering practice and the estimated total costs of the CIP have been realistically assessed.

6.3 2006-2010 CIP PROJECTS

The projects to be financed by the Series 2005 Bonds are the highest priority projects required to meet consent decree requirements and protect public health. They are included in recently completed facility plans, which identify the need for projects through the year 2017, and provide the most cost effective facilities evaluated in those plans.

The estimated project costs and construction schedules that have been developed for the 2006-2010 projects are reasonable and achievable.

6.4 DEPARTMENT MANAGEMENT

The operations of the wastewater system are directed by a professional staff for the disciplines of operations specialists, maintenance (including electrical, instrumentation, and mechanical), laboratory personnel, and other technical support personnel.

6.5 FINANCIAL PROJECTIONS

The financial projections with respect to the wastewater system are based on reasonable and conservative assumptions and fairly reflect the financial performance of the wastewater system.

Current customer rates and charges for the City and County of Honolulu compare favorably to other similar wastewater agencies. Projected customer rates and charges are based on periodic larger increases followed by extended periods of stable rates. This rate setting philosophy results in projected rates and charges which are reasonable when compared on an equivalent annual basis.

In the opinion of Carollo Engineers, projected sewer service and system facility charges will provide revenue sufficient to:

- Meet all projected costs of operation, maintenance, and routine replacement of sewer system facilities.
- Meet the existing debt service obligations and the projected requirements for the Series 2005 Bonds, and future bond issues.
- Provide sufficient revenue to pay the costs of the City and County of Honolulu's CIP through the end of the forecast period.
- Meet reserve requirements of the bond resolution.

The funds obtained from the sale of the Series 2005 Bonds, current cash reserves, fees collected over the next few years, and future bond issues will be adequate to fund the current CIP projects.

The rate at which growth occurs will not affect the ability of the City and County of Honolulu to meet its debt obligations because the growth is a small component of the overall costs and revenues associated with the financial projections. In general, many of the CIP projects are necessary and must proceed based on consent decree requirements and public safety and health concerns with or without any additional connections.

This report has been prepared at the request of Citigroup and UBS Financial Services on behalf of the City and County of Honolulu for appending to the Official Statements relating to the issuance of the Series 2005 Bonds. The conclusions, observations, and recommendations contained herein constitute only the opinions of Carollo Engineers. The various background documents, statements, and other information supplied by the City and County of Honolulu, its employees, and other consultants have been relied upon as being accurate in the performance of these analyses. However, no assurances are given nor warranties implied by Carollo as to the accuracy of such information. Carollo makes no certification and gives no assurances except as explicitly set forth in this report.

GLOSSARY

ADAF	average day annual flow
ADWF	average day dry weather flow
BOD ₅	five-day biochemical oxygen demand
CIP	Capital Improvement Plan
DOH	Department of Health
DWR	Department of Water Resources
ENRCCI	ENR Construction Cost Index
EPA	Environmental Protection Agency
ESDU	equivalent single-family dwelling unit
ft	feet
FY	fiscal year
FYE	fiscal year ending
gal	gallons
GO Bonds	General Obligation Bonds
gpd	gallons per day
gpm	gallons per minute
mgd	million gallons per day
mg/l	milligrams per liter
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
PHWWF	peak hour wet weather flow
PWWF	peak wet weather flow
SEP	supplemental environmental projects
SFR	single-family residence
TSS	total suspended solids
WWPS	wastewater pump station
WWPTF	wastewater pre-treatment facility
WWTP	wastewater treatment plant

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Appendix B

Summary of Certain Provisions of the Bond Resolution

The Bond Resolution contains terms and conditions relating to the issuance of Bonds, including various covenants and security provisions, certain of which are summarized below. This summary does not purport to be comprehensive or definitive and is subject to all of the provisions of the Bond Resolution, to which reference is hereby made. Copies of the Bond Resolution are available from the City and County.

Certain Definitions

Certain definitions contained in the Bond Resolution are summarized below. This summary does not purport to be comprehensive or definitive, and is subject to all provisions of the Bond Resolution, to which reference is hereby made. Copies of the Bond Resolution are available from the Department of Budget and Fiscal Services or the Department of Environmental Services of the City and County.

“Accrued Debt Service” means as of any date of computation and with respect to the Bonds of any Series, an amount equal to the sum of: (i) interest on such Bonds accrued and unpaid and to accrue to the end of the then current calendar month, and (ii) principal, Sinking Fund Installment and redemption premium which are due and unpaid for such Bonds and that portion of the principal, unsatisfied balance of any Sinking Fund Installment (as determined in accordance with the Bond Resolution) and redemption premium for such Bonds next due which would have accrued to the end of such calendar month if deemed to accrue monthly from a date one year prior to its due date.

“Act” means Chapter 49, Hawaii Revised Statutes, and all laws amendatory or supplemental thereto.

“Aggregate Debt Service” means, for any period and as of any date of computation, the sum of the amounts of Debt Service for such period with respect to all Series of Bonds.

“Assumed Long-Term Fixed Rate” means, with respect to Variable Rate Bonds, (i) a numerical rate of interest that such Bonds would have borne if issued as Fixed Rate Bonds with the same maturity and taking into account Sinking Fund Installments; or (ii) if the City and County has in connection with such Variable Rate Bonds entered into an Interest Rate Exchange Agreement which provides that the City and County is to pay to another person an amount determined based upon a fixed rate of interest on a notional amount and which requires the Counterparty to pay to the City and County an amount equal to the amount by which interest on the notional amount stated therein at the rate borne by such Variable Rate Bonds exceeds the interest payable on such notional amount at a rate stated therein, the fixed rate or other rate of interest set forth in or determined in accordance with such agreement. With respect to the Bonds described in clause (i) of the preceding sentence, an Authorized Officer is to certify or cause the Remarketing Agent for such Series of Variable Rate Bonds or other qualified person to certify such Assumed Long-Term Fixed Rate on the issue date of such Bonds, taking into account such market factors as such Authorized Officer or such Remarketing Agent or such qualified person deems necessary or appropriate.

“Authorized Officer” means the Director of Budget and Fiscal Services, any Deputy Director of Budget and Fiscal Services, the Director of Environmental Services or any other officer of the City and County designated by resolution of the City Council.

“Bond Anticipation Notes” means bond anticipation notes which the City and County may issue for purposes of the Wastewater System if the requirements set forth in the Bond Resolution for such issuance are satisfied.

“Bond Counsel” means an attorney or a firm of attorneys of nationally recognized standing in the field of law relating to municipal bonds selected by the City and County.

“Bondholder” or *“holder of a Bond”* or *“Holder”* means the registered owner of any Bond which at the time is registered other than to bearer, or such holders’ duly authorized attorney in fact, representative or assigns.

“Capital Appreciation Bond” means any Bond as to which interest is compounded on each Valuation Date therefor and is payable only at the maturity or prior redemption thereof.

“City Charter” means the 1973 Revised Charter of the City and County of Honolulu (1994 Edition), as the same may be amended from time to time.

“City Code” means the Revised Ordinances of Honolulu 1990, as the same may be amended from time to time.

“City Council” mean the City Council of the City and County.

“Code” means the Internal Revenue Code of 1986, as amended, and any successor statutes thereto, and any applicable regulations thereunder.

“Common Reserve Account Requirement” means as of any date of computation, an amount equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Bonds entitled to the benefit of the Common Reserve Account; provided however, that if upon issuance of a Series of Bonds entitled to the benefit of the Common Reserve Account, such amount would require moneys to be credited to the Common Reserve Account from such Bond proceeds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Account Requirement will mean an amount equal to the sum of the Common Reserve Account Requirement immediately preceding issuance of such Bonds and the maximum amount permitted under the Code to be deposited therein from the proceeds of such Bonds, as certified by an Authorized Officer; provided further, however, that for purposes of this definition, Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Account by using the Assumed Long-Term Fixed Rate applicable thereto.

“Consulting Engineer” means the engineer or engineering firm or corporation retained from time to time pursuant to the Bond Resolution to perform the acts and carry out the duties provided for such Consulting Engineer in the Bond Resolution.

“Costs” means all costs of any Improvement and include, but are not be limited to, all costs and estimated costs of the issuance of the Bonds, all architectural, engineering, inspection, financial and legal expenses, the cost of causing the payment of the principal or interest or both of the Bonds to be insured or guaranteed, the initial cost of any Support Facility or Interest Rate Exchange Agreement obtained or permitted by the Act, and interest which it is estimated will accrue during the construction of any Improvements and for six (6) months thereafter.

“Debt Service” means, as of any particular date of computation, with respect to any Bonds and with respect to any period, the aggregate of the amounts to be paid or set aside in such period for the payment (or retirement) of the principal and Redemption Price (if any) of, and interest on, such Bonds; provided, however, that the term “Debt Service” does not include interest on Bonds to the extent it is to be paid from amounts on credit to a Series Improvement Interest Subaccount, amounts on credit to the Debt Service Account or any other provisions made for the payment of interest.

“Department” means the Department of Environmental Services of the City and County as established by the City Charter, or the successor thereto.

“Depository” means any bank, national banking association or trust company selected and appointed by an Authorized Officer in accordance with the Bond Resolution as a depository of moneys and Investment Securities held under the provisions of the Bond Resolution.

“Depository” means The Depository Trust Company, New York, New York, or its nominee, or any other person, firm, association or corporation designated in the Series Resolution authorizing a Series of Bonds or a Series Certificate relating to such Series of Bonds to serve as securities depository for the Bonds of such Series.

“Director of Budget and Fiscal Services” means the Director of Budget and Fiscal Services of the City and County appointed pursuant to and having the powers as set forth in the Act and the City Charter, or any successor.

“Director of Environmental Services” means the Director of the Department of Environmental Services of the City and County appointed pursuant to and having the powers as set forth in the Act and the City Charter, or any successor.

“Exempt Obligation” means an obligation of any state or territory of the United States of America, any political subdivision of any state or territory of the United States of America, or any agency, authority, public benefit corporation or instrumentality of such state, territory or political subdivision, the interest on which is excludable from gross income under Section 103 of the Code, and which; at the time an investment therein is made or such obligation is deposited in any fund or account under the Bond Resolution, is rated, without regard to qualification of such rating by symbols such as “+” or “-” or numerical notation, “Aa” or better by Moody’s and “AA” or better by S&P, or, if such obligation is not rated by Moody’s or S&P, or, if such obligation is rated by neither Moody’s nor S&P, has been assigned a comparable rating by another nationally recognized rating service, but in no event rated lower than the lowest rating on Outstanding Bonds assigned by Moody’s or S&P.

“Fiscal Year” means the twelve month period established by the City and County or provided by law from time to time as its fiscal year, and which, as of the date of adoption of the Bond Resolution, is the 12-month period commencing on July 1 of any year and ending on June 30 of the following year.

“Government Obligation” means a direct obligation of the United States of America, an obligation the principal of, and interest on, which are guaranteed by the United States of America, provided, that the full faith and credit of the United States of America is pledged to any such direct obligation or guarantee.

“Improvements” means the acquisition, purchase, construction, reconstruction, improvement, betterment or extension of the Wastewater System.

“Interest Rate Exchange Agreement” means an agreement entered into by the City and County relating to Bonds of one or more Series which provides that during the term of such agreement the City and County is to pay to the Counterparty an amount based on the interest accruing at a fixed or variable rate per annum on a notional amount and that the Counterparty is to pay to the City and County either (i) an amount based on the interest accruing on such notional amount at a fixed, capped or variable rate per annum, in each case computed according to a formula set forth in such agreement, or that one will pay to the other any net amount due under such agreement, or (ii) an amount based on the amount by which the rate per annum at which such Bonds bear interest exceeds a rate per annum stated in such agreement.

“Investment Agreement” means an agreement for the investment of moneys with a Qualified Financial Institution.

“Investment Securities” means any of the following, if and to the extent that the same are legal for the investment of funds of the Department:

- (i) Government Obligations;
- (ii) Investment Agreements;
- (iii) Direct obligations and fully guaranteed certificates of beneficial interest of the Export-Import Bank of the United States; consolidated debt obligations and letter of credit-backed issues of the Federal Home Loan Banks; participation certificates and senior debt obligations of the Federal Home Loan Mortgage Corporation (“FHLMCs”); debentures of the Federal Housing Administration; mortgage-backed securities (except stripped mortgage securities which are valued greater than par on the portion of unpaid principal) and senior debt obligations of Fannie Mae (“FNMA’s”); participation certificates of the General Services Administration; guaranteed mortgage-backed securities and guaranteed participation certificates of the Government National

Mortgage Association (“GNMA’s”); guaranteed participation certificates and guaranteed pool certificates of the Small Business Administration; debt obligations and letter of credit-backed issues of the Student Loan Marketing Association; local authority bonds of the U.S. Department of Housing & Urban Development; guaranteed Title XI financings of the U.S. Maritime Administration; guaranteed transit bonds of the Washington Metropolitan Area Transit Authority; Resolution Funding Corporation securities.

(iv) direct obligations of any state or territory of the United States of America or any subdivision or agency thereof whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, “Aa” or better by Moody’s and “AA” or better by S&P, or any obligation fully and unconditionally guaranteed by any state, subdivision or agency whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, “Aa” or better by Moody’s and “AA” or better by S&P;

(v) commercial paper (having original maturities of not more than 270 days) rated, at the time of purchase, “P-1” by Moody’s and “A-1” or better by S&P;

(vi) Federal funds, unsecured certificates of deposit, time deposits or bankers acceptances (in each case having maturities of not more than 365 days) of any domestic bank including a branch office of a foreign bank which branch office is located in the United States, provided legal opinions are received to the effect that full and timely payment of such deposit or similar obligation is enforceable against the principal office or any branch of such bank, which, at the time of purchase, has a short-term “Bank Deposit” rating of “P-1” by Moody’s and a “Short-Term CD” rating of “A-1” or better by S&P.

(vii) deposits of any bank or savings and loan association which has combined capital, surplus and undivided profits of not less than \$3 million, provided such deposits are continuously and fully insured by the Bank Insurance Fund or the Savings Association Insurance Fund of the Federal Deposit Insurance Corporation (“FDIC”);

(viii) investments in money-market funds rated “Aaa” by Moody’s, and “AAAm” or “AAAm-G” by S&P;

(ix) repurchase agreements collateralized by Government Obligations, GNMA’s, FNMA’s or FHLMC’s with any registered broker/dealer subject to the Securities Investors’ Protection Corporation jurisdiction or any commercial bank insured by the FDIC, if such broker/dealer or bank has an uninsured, unsecured and unguaranteed obligation rated in the top two rating tiers by Moody’s, and “AA-1” or “AA-” or better by S&P, provided:

(a) a master repurchase agreement or specific written repurchase agreement governs the transaction; and

(b) the securities are held free and clear of any lien by the Depository or an independent third party acting solely as agent (“Agent”) for the Depository, and such third party is (i) a Federal Reserve Bank, or (ii) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than \$50 million, and the Depository has received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Depository; and

(c) a perfected first security interest under the Uniform Commercial Code, or book entry procedures prescribed at 31 C.F.R. 306.1 et seq. or 31 C.F.R. 350.0 et seq. in such securities is created for the benefit of the Depository; and

(d) the repurchase agreement has a term of 3 years or less, and the Depository or the Agent will value the collateral securities no less frequently than weekly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within two business days of such valuation; and

(e) the fair market value of the securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 100%;

(x) investments in any mutual fund whose portfolio is limited to Government Obligations and the investments described in clause (ii) of Investment Securities; and

(xi) student loan resource securities including student loan auction rate securities, student loan asset-backed notes, student loan program revenue notes and bonds, and securities issued pursuant to Rule 144A of the Securities Act of 1933, including any private placement issues, issued with either bond insurance or overcollateralization guaranteed by the United States Department of Education, provided all insurers maintain an "Aaa" by Moody's, "AAA" by S&P or equivalent rating by other rating agencies.

"*Moody's*" means Moody's Investors Service, Inc., its successors and their assigns, and, if such corporation for any reason no longer performs the functions of a securities rating agency, "Moody's" is deemed to refer to any other nationally recognized rating agency, if any, designated by the Director of Budget and Fiscal Services.

"*Net Revenue Requirement*" means with respect to any Fiscal Year or any period, an amount equal to the greater of (i) the sum of (a) the Aggregate Debt Service in such Fiscal Year or such period, and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.20 times the Aggregate Debt Service in such Fiscal Year or such period, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year or such period.

"*Net Revenues*" means, with respect to any period; the Revenues during such period less amounts required to pay Operation and Maintenance Expenses.

"*Operation and Maintenance Expenses*" means the costs and expenses of operating and maintaining the Wastewater System, including, without limiting the generality of the foregoing, (i) all expenses includable in the operation and maintenance expense accounts of the Department relating to the Wastewater System according to generally accepted accounting principles, exclusive of depreciation and amortization of property values or losses, (ii) to the extent not included in the preceding clause (i) or paid from Bond proceeds or otherwise, the Department's share of the costs and expenses of operating and maintaining any plants and properties jointly owned with others, and (iii) the amounts, if any, payable to the United States Treasury Department pursuant to Section 148 of the Code.

"*Opinion of Counsel*" means with respect to the City and County a written opinion of counsel selected by the Director of Budget and Fiscal Services who is not an employee of the City and County, and which, with respect to Federal income tax law and securities law relating to obligations issued by state and local governmental units, is Bond Counsel. Any Opinion of Counsel may be based (insofar as it relates to factual matters or information which is in the possession of the City and County) upon a written certificate of the City and County unless such counsel knows, or in the exercise of reasonable care should have known, that such written certificate is erroneous.

"*Outstanding*" or "*outstanding*" when used with reference to Bonds means, as of any date, Bonds theretofore or thereupon issued pursuant to the Bond Resolution, except: (a) any Bonds canceled by a Paying Agent or paid at or prior to such date; (b) Bonds in lieu of or in substitution for which other Bonds have been delivered pursuant to the Bond Resolution; (c) Bonds deemed to be no longer outstanding under the Bond Resolution as provided in the Bond Resolution and (d) Option Bonds tendered or deemed tendered in accordance with the provisions of the Series Resolution or the Series Certificate relating to such Bonds.

“Parity Support Facility Reimbursement Obligation” means the obligation of the City and County described in the Bond Resolution to directly reimburse the Support Facility Provider of any Support Facility for amounts paid by such Support Facility Provider under such Support Facility or a Counterparty under an Interest Rate Exchange Agreement for amounts paid thereunder, on a parity with the obligation of the City and County to pay the Bonds, whether or not such obligation to reimburse is evidenced by a promissory note or other similar instrument.

“Paying Agent” means, as to Bonds of any particular Series, the Director of Budget and Fiscal Services or the bank or trust company designated for the payment of the principal and Redemption Price, if any of, and interest on, the Bonds of such Series in the Series Resolution authorizing the issuance of such Series or the Series Certificate relating to such Series.

“Record Date” means, with respect to any Series of Bonds, (i) with respect to the payment of interest, the fifteenth (15th) day (whether or not a Business Day) of the month preceding an interest payment date; (ii) with respect to notice of redemption, the 45th day (whether or not a Business Day) preceding the date of redemption; or (iii) such other day as may be provided in the Series Resolution authorizing the issuance of such Series or the Series Certificate relating to such Series.

“Refunded Municipal Obligations” means Exempt Obligations which are rated in the highest rating category by Moody’s and S&P and provision for the payment of the principal of and interest on which has been made by an irrevocable deposit with a trustee or escrow agent of Governmental Obligations, which are held by a bank or trust company organized and existing under the laws of the United States of America or any state, the District of Columbia or possession thereof in the capacity as custodian, the maturing principal of and interest on which Government Obligations will be sufficient to pay, when due, the principal of and interest on such Exempt Obligations.

“Reimbursable Obligations” means reimbursable general obligation bonds issued and delivered or to be hereafter issued and delivered by the City and County to finance certain costs related to the Wastewater System, the debt service on which the Department is required by State law to reimburse the City and County’s General Fund.

“Reimbursable Obligation Requirement” means, with respect to any period of time, the amount required to be credited to the Reimbursable Obligation Account pursuant to the ordinances and resolutions of the City Council authorizing the issuance and delivery of Reimbursable Obligations.

“Required Deposits” means, for any period, amounts required: (i) to be paid into the Common Reserve Account, each Separate Reserve Account, the Subordinate Obligation Account and Reimbursable Obligation Account; and (ii) to pay Support Facility Reimbursement Obligations.

“Revenue Bond Index” means the 30 year Revenue Bond Index of The Bond Buyer, a publication in New York, New York, or any successor publication maintaining such Index or in the event The Bond Buyer or any successor publication does not maintain such Index, an equivalent index with the same or similar components as the Revenue Bond Index.

“Revenues” means the moneys, including any moneys collected from the City and County or any department thereof other than the Department, derived by the Department from the rates, rentals, fees and charges prescribed for the use and services of, and the facilities and commodities furnished by, the Wastewater System, including, without limiting the generality of the foregoing, (i) all income, receipts, profits, and other moneys derived from the furnishing or supplying of the services, facilities and commodities through the Wastewater System; (ii) all income from investments of moneys held under the Bond Resolution including investment income on the Improvement Account but not including any earnings on the Rebate Account, the Subordinate Obligation Account or the Reimbursable Obligation Account; (iii) all payments made by Counterparties pursuant to Interest Rate Exchange Agreements; and (iv) moneys and Investment Securities transferred from the Rate Stabilization Account to the Sewer Fund within 90 days following the end of a Fiscal Year. “Revenues” will not include, (i) deposits subject to refund until such deposits have become the property of the City and County; (ii) contributions in-aid-of construction and assessment, impact and other similar fees imposed and collected by the City and County which are targeted to pay the Costs of specific Improvements; (iii) income, fees, charges, receipts, profits or other moneys derived by the Department from the ownership or operation of any separate utility system; (iv) any gifts, grants,

donations or other moneys received by the City and County for purposes of the Wastewater System from any State or Federal agency or other person if such gifts, grants, donations or other moneys are the subject of any limitation or reservation: (a) imposed by the donor or grantor; or (b) imposed by law or administrative regulation to which the donor or grantor is subject, limiting the application of such funds; (v) amounts retained in the Sewer Fund for working capital and operating reserves pursuant to the Bond Resolution; (vi) moneys and Investment Securities transferred from the Sewer Fund to the Rate Stabilization Account within 90 days following the end of a Fiscal Year; or (vii) Wastewater System Facility Charges:

“*S&P*” means Standard & Poor’s Rating Services, a division of The McGraw-Hill Companies, its successors and their assigns, and, if such corporation for any reason no longer performs the functions of a securities rating agency, S&P is deemed to refer to any other nationally recognized rating agency designated by the Director of Budget and Fiscal Services.

“*Serial Bonds*” means Bonds which mature serially and which are not Term Bonds.

“*Series,*” “*Series of Bonds*” or “*Bonds of a Series*” means all Bonds designated as being of the same series issued and delivered on original issuance in a simultaneous transaction, and any Bonds thereafter delivered in lieu thereof or in substitution therefor pursuant to the Bond Resolution.

“*Sinking Fund Installment*” means an amount so designated which is established pursuant to the Bond Resolution. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited pursuant to the Bond Resolution toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

“*Subordinate Obligations*” means any bonds, notes or other evidences of indebtedness of the City and County payable from the Net Revenues, other than the Bonds and the Reimbursable Obligations, issued in compliance with the provisions of the Bond Resolution.

“*Subordinate Obligation Requirement*” means with respect to any period of time, the amount required to be deposited in the Subordinate Obligation Account pursuant to the Bond Resolution, indenture or other instruments of the City and County adopted by or entered into by the City and County in accordance with the Bond Resolution and providing for all payments with respect to Subordinate Obligations.

“*Supplemental Resolution*” means any resolution adopted by the City Council and becoming effective pursuant to and in compliance with the provisions of the Bond Resolution which amends or supplements the provisions of the Bond Resolution, any Series Resolution or any other Supplemental Resolution.

“*Support Facility*” means an irrevocable letter of credit, surety bond, loan agreement, standby purchase agreement or other agreement, facility or insurance or guaranty arrangement issued or extended by one or more Support Facility Providers, pursuant to which the City and County is entitled to obtain moneys to pay the principal or Redemption Price of Bonds due in accordance with their terms or tendered for purchase or redemption, plus accrued interest thereon to the date of payment, purchase or redemption thereof in accordance with the Bond Resolution and with the Series Resolution authorizing such Bonds or a Series Certificate relating to such Bonds, whether or not the City and County is in default.

“*Support Facility Provider*” means a bank, a trust company, a national banking association, an organization subject to registration with the Board of Governors of the Federal Reserve System under the Bank Holding Company Act of 1956 or any successor provisions of law, a federal branch pursuant to the International Banking Act of 1978 or any successor provisions of law, a savings bank, a savings and loan association, an insurance company or association chartered or organized under the laws of any state of the United States of America, the Government National Mortgage Association or any successor thereto, the Federal National Mortgage Association or any successor thereto, or any other federal agency or instrumentality approved by the City and County or a Counterparty.

“Support Facility Reimbursement Obligation” means the obligation of the City and County described in the Bond Resolution to directly reimburse the Support Facility Provider of a Support Facility for amounts paid thereunder or a Counterparty under an Interest Rate Exchange Agreement for amounts paid thereunder, whether or not such obligation to reimburse is evidenced by a promissory note or other similar instrument.

“Tax-exempt Bonds” means Bonds the interest on which is intended by the City and County to be excluded from gross income of the holders of such Bonds for federal income taxation purposes pursuant to the Code.

“Term Bonds” means Bonds, the retirement or the redemption of which is to be provided for from moneys credited to the Debt Service Account pursuant to the Bond Resolution.

“Variable Rate Bonds” means any Bonds issued bearing interest at a rate per annum subject to adjustment from time to time based on the terms thereof, based upon an index, or otherwise calculated in a manner which precludes the actual rate for the entire term of such Bonds from being ascertainable in advance as provided for in the Bond Resolution.

“Wastewater System” means all plants and properties, both real and personal and tangible and intangible, now or hereafter existing, under the management, control or jurisdiction of the Department, used for, useful in, or pertaining to the collection, pretreatment, advanced primary treatment, primary treatment, secondary treatment, tertiary treatment, purification, conveyance, storage, drainage, discharge and disposal of sewage, water, wastewater, stormwater, influent, effluent, or other liquids or suspended solids, or incidental or necessary to the preservation of the City and County’s or the Department’s wastewater conveyance facilities, wastewater treatment plants, wastewater disposal facilities, storm drains and sewers, sewage pump stations, sewage treatment plants, sewers, interceptors, outfall and other related facilities and plants, and the integrity thereof. The terms used in the preceding sentence have the meanings as ascribed to them in the City Code. Without limiting the generality of the foregoing, the Wastewater System includes: (1) the existing plants and properties comprising the Wastewater System under the management, control or jurisdiction of the Department, as of the date of adoption of the Bond Resolution; and (2) all Improvements thereafter constructed or otherwise acquired, purchased or annexed.

“Wastewater System Facility Charge” has the meaning specified in the City Code.

Pledge Made in the Bond Resolution

The Bonds are payable solely from and secured by the funds pledged therefor under the Bond Resolution. The City and County has pledged as security for the payment of the principal of, Redemption Price, if any, and interest on the Bonds in accordance with their terms and the provisions of the Bond Resolution, subject only to the provisions of the Bond Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Bond Resolution: (i) the proceeds of sale of the Bonds pending application thereof in accordance with the provisions of the Bond Resolution or of a Series Resolution or a Series Certificate; (ii) the Net Revenues; and (iii) all Funds and Accounts held under the Bond Resolution other than the Rebate Account, the Subordinate Obligation Account, the Reimbursable Obligation Account, with respect to any Series of Bonds not entitled to the benefit of a Separate Series Reserve Account, such Separate Series Reserve Account, and with respect to any Series of Bonds not entitled to the benefit of the Common Reserve Account, the Common Reserve Account, including the investments, if any, in such Funds and Accounts; and the Bondholders have a lien on, and a security interest in, such proceeds, Net Revenues and Funds and Accounts for such purpose and subject to such provisions of the Bond Resolution. Such lien and security interest for the payment of Bonds are prior and superior to the lien and security interest for the payment of Subordinate Obligations and Reimbursable Obligations.

The Bond Resolution provides that each of the obligations, duties, limitations and restraints imposed upon the City and County by the Bond Resolution is deemed to be a covenant between the City and County and every Holder of the Bonds, and the Bond Resolution and every provision and covenant set forth in the Bond Resolution is deemed to be and constitute a continuing contract and agreement between the City and County and the Holders from time to time of the Bonds issued under the Bond Resolution, to secure the full and final payment of the principal and redemption price of and interest on all Bonds which may from time to time be issued, executed, and delivered under the Bond Resolution. The covenants and agreements set forth in the Bond Resolution to be performed by the City and County are for the equal and proportionate benefit, security and protection of all Holders of the Bonds without

preference, priority or distinction as to payment or security or otherwise of any of the Bonds over any of the others for any reason or cause whatsoever except as expressly provided in the Bond Resolution, in a Series Resolution, a Series Certificate or a Supplemental Resolution, or in the Bonds.

Additional Bonds

Basic Test. One or more Series of Bonds (exclusive of refunding Bonds) may be issued at any time and from time to time for any lawful use or purpose relating to the Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements, but only upon compliance as to each such Series with the provisions set forth in the Bond Resolution, including, among other things, delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Account after issuance of the Bonds then to be issued, and that after deposit in the Common Reserve Account of the amount, if any, to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in the Common Reserve Account will not be less than the Common Reserve Account Requirement.

2. A written certificate of the City and County stating the amount required to be in the Separate Series Reserve Account created, if any, to provide additional security for the Bonds of such Series after issuance of the Bonds then to be issued, and that after deposit in such Separate Series Reserve Account of the amount to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in such Separate Series Reserve Account will not be less than the Separate Series Reserve Account Requirement for such Separate Series Reserve Account.

3. Either (I) a written certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department's books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive 12-months' period out of 24 months immediately preceding the month in which such Bonds are issued were not less than the greater of: (x) the sum of (1) the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and the 12-month period selected and (2) the Required Deposits for such Fiscal Year or the 12-month period selected; and (y) 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and the 12-month period selected, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of the written certificate of the City and County, or (II) a written certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Bonds are expected to commence operations, or, if the proceeds of such Series of Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Bonds are issued, are estimated to be not less than the greater of: (x) the sum of (1) the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, and (2) the Required Deposits for any such Fiscal Year; and (y) 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of such written certificate of the City and County or certificate of the Consulting Engineer, as the case may be.

The provisions of the Bond Resolution described in item 3 above do not apply to the Series 2005 Bonds.

Certain Adjustments. The Bond Resolution permits and requires certain adjustments to be made in determining whether the Basic Test described above for the issuance of Bonds other than Refunding Bonds is met.

1. In determining Debt Service on Variable Rate Bonds then Outstanding and Variable Rate Bonds then proposed to be issued for purposes of the Basic Test described above, the interest rate is to be

calculated as: (i) if any Variable Rate Bonds are then Outstanding and have been Outstanding for at least 24 months, the highest average interest rate borne by such Variable Rate Bonds for any 30-day period or if no such Variable Rate Bonds are then Outstanding, the Revenue Bond Index at the time of calculation.

2. Bond Anticipation Notes then Outstanding are to be treated as Bonds. In determining Debt Service on such Bond Anticipation Notes, such Bond Anticipation Notes are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

3. Subordinate Obligations and Reimbursable Obligations originally issued with a maturity of five (5) years or less are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

4. In preparing the certificate required by the Basic Test described above, the Authorized Officer or the Consulting Engineer, as applicable, may make adjustments to the Net Revenues as follows:

a. If any changes have been made in the schedule of rates and charges imposed by the City and County for commodities and services furnished by the Wastewater System which are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and were placed into effect subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer, may, if such changes result in increases in such rates and charges, and must, if such changes result in reductions in such rates and charges, adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the schedule of rates and charges in effect at the time of the adoption of the Series Resolution providing for the issuance of such Bonds had been in effect during the portion of such period in which such schedule was not in effect.

b. If customers are being served by the Department at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and who were added to the Wastewater System subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the additional customers had been served during the portion of the period in which such customers were not served.

c. If residential, commercial, industrial or institutional customers which are in existence are not then served by the Wastewater System at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued, but are then expected to be served during the five (5) Fiscal Years covered by such certificate, the Authorized Officer or the Consulting Engineer, as applicable, must estimate the effect which such new customers would have had on the Net Revenues for the period selected pursuant to item 3 of the *Basic Test* described above, if such new customers had been served during the entire period and may adjust the Net Revenues for such period to give effect to such new customers. Any such estimate will be based upon the operating experience and records of the Department with respect to the Wastewater System and upon any available financial and quarterly statistics deemed pertinent by the Authorized Officer or the Consulting Engineer, as applicable.

d. If any long-term, guaranteed contracts with customers of the Wastewater System are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and which were entered into subsequent to the start of the Fiscal Year or 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if such contracts had been in effect for the entire period.

e. In rendering the certificate required pursuant to item 3 of the Basic Test, the Authorized Officer or the Consulting Engineer, as applicable, must deem the Operation and

Maintenance Expenses for the Wastewater System for the first Fiscal Year of the five (5) year period to be equal to such Operation and Maintenance Expenses for the Fiscal Year immediately preceding the Fiscal Year in which the proposed Series of Bonds is to be delivered, and thereafter the Authorized Officer or the Consulting Engineer, as applicable, must adjust, if deemed necessary, for any increased Operation and Maintenance Expenses which are estimated to occur during any subsequent Fiscal Year during the five (5) year period and are, in the judgment of the Authorized Officer or the Consulting Engineer, as applicable, essential to maintaining and operating the Wastewater System.

f. In rendering any certificate pursuant to the Bond Resolution, the Authorized Officer or the Consulting Engineer, as applicable, may rely upon estimates from other sources which the Authorized Officer or the Consulting Engineer, considers reliable, making such adjustments and provisions for contingencies based on similar projects and other considerations as deemed appropriate by such Authorized Officer or the Consulting Engineer.

Refunding Bonds

The City and County may issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of Bonds Outstanding, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the Bond Resolution are complied with, including all of the conditions of the *Basic Test* described above, except that condition 3 need not be complied with if the maximum annual Debt Service in any Fiscal Year on the refunding Bonds proposed to be issued does not exceed maximum annual Debt Service in any Fiscal Year on the refunded Bonds by more than 10%.

The City and County may also issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of outstanding Subordinate Obligations or Reimbursable Obligations, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the Bond Resolution are complied with, including all of the conditions of the *Basic Test* described above.

Bond Anticipation Notes

Bond Anticipation Notes may be issued by the City and County at such time as the City and County shall have by a Series Resolution duly adopted authorized the issuance of Bonds under the Bond Resolution. No Bond Anticipation Notes may be issued unless there has been filed with the Director of Budget and Fiscal Services on or prior to the date of issuance of such Bond Anticipation Notes, a written certificate of the City and County to the effect that, based on market conditions expected to be prevailing at the time of issuance of the Series of Bonds in anticipation of which such Bond Anticipation Notes are issued and on other reasonable assumptions set forth in such written certificate, the provisions of the Bond Resolution for the issuance of additional Bonds other than refunding Bonds are expected to be complied with at the time of issuance of such Series of Bonds. The maximum maturity of any Bond Anticipation Notes, including the renewals thereof, must not exceed five years from the date of the original Bond Anticipation Note. The principal of Bond Anticipation Notes may be paid from the proceeds of such Bond Anticipation Notes (or any renewal thereof) or from the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued. The interest on such Bond Anticipation Notes may be secured by a lien on and pledge of, and be paid from, the Net Revenues on a parity with the lien on and pledge of the Net Revenues created in the Bond Resolution for the payment and security of the Bonds. The principal of Bond Anticipation Notes will be secured by a lien on and pledge of the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued and any such pledge will have priority over any other pledge of such proceeds created by the Bond Resolution. Bond Anticipation Notes issued under the Bond Resolution are to be treated as Bonds for all purposes of the Bond Resolution, and are to be payable from the Debt Service Account, except to the extent that the principal of any such Bond Anticipation Note is paid from the proceeds of other Bond Anticipation Note or from the proceeds of Bonds.

Subordinate Obligations

The City and County may issue Subordinate Obligations which are payable out of, and which may be secured by a pledge of, such amounts in the Subordinate Obligation Account as may from time to time be available for the purpose of payment. The City and County may, by resolution, provide for various priorities in the liens and pledges securing Subordinate Obligations, and nothing in the Bond Resolution shall be construed so as to require that the payment of, or pledges securing, Subordinate Obligations be on a parity *inter se*.

The City and County may also issue Subordinate Obligations: (i) to refund any Subordinate Obligations issued as provided in the Bond Resolution; (ii) to refund Outstanding Bonds; or (iii) to refund any Reimbursable Obligations. Such Subordinate Obligations issued for refunding purposes may be payable out of, and may be secured by a pledge of, such amounts in the Subordinate Obligations Fund or Wastewater General Account as may from time to time be available therefor.

The Bond Resolution requires that any resolution, indenture or other instrument securing or evidencing each issue of Subordinate Obligations must contain provisions (which shall be binding on all holders of such Subordinate Obligations) not more favorable to the holders of such Subordinate Obligations than as described below:

(1) In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to the City and County or the Department, or to the property of the City and County or property operated by the Department, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of the City and County or the Department, the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any payment from the trust estate under the Bond Resolution consisting of the Net Revenues and funds held under the Bond Resolution (the "Trust Estate" for these purposes) on account of principal (and premium, if any) or interest on the Subordinate Obligations.

(2) In the event that any issue of Subordinate Obligations is declared due and payable before its expressed maturity because of the occurrence of an event of default (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds Outstanding at the time such Subordinate Obligations so become due and payable because of such occurrence of such an event of default will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Subordinate Obligations.

(3) If any Event of Default with respect to the Bonds has occurred and be continuing (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Subordinate Obligations.

(4) No Bondholder shall be prejudiced in his right to enforce subordination of the Subordinate Obligations by any act or failure to act on the part of the City and County.

(5) The Subordinate Obligations may provide that the provisions of (1), (2), (3) and (4) above are solely for the purpose of defining the relative rights of the Bondholders on the one hand, and the holders of Subordinate Obligations on the other hand, and nothing therein shall impair, as between the City and County and the owners of the Subordinate Obligations, the obligation of the City and County to pay to the owners thereof the principal thereof and premium, if any, and interest thereon in accordance with its terms, nor shall anything therein prevent the holders of the Subordinate Obligations from exercising all remedies otherwise permitted by applicable law or thereunder upon default thereunder, subject to the rights under (1), (2), (3) and (4) above of the Holders of Bonds to receive cash, property or securities otherwise payable or deliverable to the holders of the Subordinate Obligations; and the Subordinate Obligations may provide that, insofar as a trustee or paying agent for such Subordinate Obligations is concerned, the

foregoing provisions shall not prevent the application by such trustee or paying agent of any moneys deposited with such trustee or paying agent for the purpose of the payment of or on account of the principal (and premium, if any) and interest on such Subordinate Obligations if such trustee or paying agent did not have knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

Any issue of Subordinate Obligations may have such rank or priority with respect to any other issue of Subordinate Obligations as may be provided in the resolution, indenture or other instrument securing such issue of Subordinate Obligations and may contain such other provisions as are not in conflict with the provisions of the Bond Resolution.

Reimbursable Obligations

The obligation for the payment of Reimbursable Obligations shall be: (i) after and inferior to the lien and security interest for the payment of Bonds and those Subordinate Obligations which are payable from the Subordinate Obligation Account; and (ii) prior and superior to the lien and security interest for the payment of those Subordinate Obligations which are payable from the Wastewater General Account. Reimbursable Obligations are payable from the Reimbursable Obligation Account.

Support Facilities and Interest Rate Exchange Agreements

In connection with the issuance of any Series of Bonds and to the extent permitted by law, the City and County may obtain or cause to be obtained from one or more Support Facility Providers one or more Support Facilities providing for payment of all or a portion of the purchase price or principal, premium, if any, or interest due or to become due on specified Bonds of such Series, or providing for the purchase of such Bonds or a portion of such Bonds by such Support Facility Providers, or providing, in whole or in part, for the funding of the Common Reserve Account or a Separate Series Reserve Account pursuant to the Bond Resolution.

In connection with the issuance of any Series of Bonds or to better manage its assets and liabilities and, to the extent permitted by law, the City and County may enter into with one or more Counterparties one or more Interest Rate Exchange Agreements; *provided* that no such Interest Rate Exchange Agreement shall adversely affect the exclusion from gross income for purposes of federal income taxation of interest on the Tax-exempt Bonds of any Series.

The City and County may enter into agreements with one or more Support Facility Providers or Counterparties to provide for, among other things: (i) the payment of fees and expenses to such Support Facility Providers or Counterparties; (ii) the terms and conditions of such Support Facility or Interest Rate Exchange Agreement and the Series of Bonds affected thereby; and (iii) the security, if any, to be provided to such Support Facility Providers or Counterparties. The City and County may secure the Support Facility or Interest Rate Exchange Agreement by an agreement providing for the purchase of the Bonds secured thereby with such adjustments to the rate of interest, method of determining interest, maturity, or redemption provisions as specified in the Series Resolution or the Series Certificate. Debt Service with respect to any Bonds so secured is to be calculated for purposes of the definition of Common Reserve Account Requirement by using the Assumed Long-Term Fixed Rate.

The City and County may also agree in any agreement with the Support Facility Provider of such Support Facility or the Counterparty under an Interest Rate Exchange Agreement to reimburse directly such Support Facility Provider or Counterparty for any amounts paid under the terms of such Support Facility or Interest Rate Exchange Agreement, together with interest thereon (the "Support Facility Reimbursement Obligation"); *provided, however*, that no Support Facility Reimbursement Obligation is to be created, for purposes of the Bond Resolution, until amounts are paid under such Support Facility or Interest Rate Exchange Agreement, as the case may be. Any such Support Facility Reimbursement Obligation may be secured by a lien on and pledge of the Net Revenues on a parity with the lien on and pledge of the Net Revenues created by the Bond Resolution with respect to the Bonds (a "Parity Support Facility Reimbursement Obligation"). Any such Parity Support Facility Reimbursement Obligation will be deemed to be a part of the Series of Bonds to which the Support Facility which gave rise to such Parity Support

Facility Reimbursement Obligation relates. Payment of Support Facility Reimbursement Obligation may be made out of the Sewer Fund as provided in the Bond Resolution.

Any Support Facility deposited in the Common Reserve Account or the long-term debt of the Support Facility Provider of such Support Facility must, in each case, be in the highest rating category each Rating Agency, and if rated by A.M. Best & Company, also be rated in the highest rating category by A.M. Best & Company or its successors. In the event any Support Facility deposited in the Common Reserve Account or the long-term debt of the issuer of any Support Facility deposited in the Common Reserve Account falls below the highest rating category of each Rating Agency, and A.M. Best & Company, if rated by A.M. Best & Company, the City and County must, within 120 days, obtain a new Support Facility which is rated in the highest category of each Rating Agency or for which the long-term debt of the issuer of such new Support Facility is rated in the highest rating category of each Rating Agency and A.M. Best & Company, if rated by A.M. Best & Company; provided, however, that if the new Support Facility is not obtained within 120 days, the City and County must deposit in the Common Reserve Account Net Revenues in the amount provided in the Bond Resolution. If a disbursement is made pursuant to a Support Facility deposited in the Common Reserve Account, the City and County must: first, reinstate the full amount of such Support Facility; and second, if necessary deposit Net Revenues in the Common Reserve Account in the amount of the disbursement made under such Support Facility, in either case such that the amount in the Common Reserve Account is equal to the Common Reserve Account Requirement within a period of time not longer than would be required to restore the Common Reserve Account by application of moneys in the Sewer Fund. The City and County may at any time deposit cash or Investment Securities as replacement for one or more Support Facilities.

The City and County must obtain and maintain in effect one or more Support Facilities for Option Bonds. The City and County must obtain a replacement Support Facility to replace any Support Facility for Option Bonds that is expiring, not renewed or terminated. Procedures for such replacement, maintenance and notices to Bondholders, rating agencies or other persons are to be provided in the Series Resolution authorizing the Series of Bonds or the Series Certificate relating to such Bonds.

Funds and Accounts

The City and County has established by ordinances the Sewer Fund and the Sewer Revenue Bond Improvement Fund (the "Improvement Fund"). The Bond Resolution establishes the following accounts in the Sewer Fund:

- Wastewater System Facility Charge Account,
- Debt Service Account,
- Common Reserve Account,
- Rebate Account,
- Rate Stabilization Account,
- Subordinate Obligation Account,
- Reimbursable Obligation Account,
- Renewal and Replacement Account, and
- Wastewater General Account.

The Bond Resolution permits the creation and establishment of one or more Separate Series Reserve Accounts in the Sewer Fund. The Bond Resolution also permits the establishment of one or more Series Improvement Subaccounts in the Improvement Account and requires the establishment of one or more Series Improvement Interest Subaccounts in the Improvement Account if interest on the Bonds of a Series is to be paid from the proceeds of such Bonds during the period of construction of any Improvements and for six months thereafter.

Sewer Fund

Revenues and Wastewater System Facility Charges will be collected by the Department and deposited into the Sewer Fund. From the amounts deposited in the Sewer Fund, the Department will transfer all moneys collected as Wastewater System Facility Charges to the Wastewater System Facility Charge Account, pay the current Operation and Maintenance Expenses, transfer to the Rebate Account such amount as is necessary to pay the rebate amount due the United States Treasury Department under Section 148 of the Code or to set aside as a reserve for

such payment and make the transfers to other funds and accounts as provided in the Bond Resolution. In addition, all other amounts required by the City Charter and the Bond Resolution to be deposited in the Sewer Fund will be so deposited.

In each month, the City and County, after making the transfer, if any, to the Wastewater System Facility Charge Account of all moneys received as Wastewater System Facility Charges, after paying or setting aside a sufficient amount to pay the Operating and Maintenance Expenses and making the transfer to the Rebate Account as described above, will retain, apply or transfer on the 5th day preceding the end of each month a sufficient amount of moneys in the Sewer Fund, in the following order of priority:

First, to the Debt Service Account, if and to the extent required so that the balance in the Debt Service Account will be equal to the Accrued Debt Service for all Bonds Outstanding and the interest accrued on all Bond Anticipation Notes outstanding on said date;

Second, (a) to the Common Reserve Account, if and to the extent required, either (i) an amount such that the balance in the Common Reserve Account will be equal to the Common Reserve Account Requirement on such date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in the Common Reserve Account will be eliminated at the end of the sixth (6th) month following the first credit; and (b) to each Separate Series Reserve Account, if and to the extent required, either (i) an amount such that the balance in each Separate Series Reserve Account will be equal to the Separate Series Reserve Account Requirement for each Separate Series Reserve Account on such date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in each Separate Series Common Reserve Account will be eliminated at the end of the sixth (6th) month following the first credit; provided, however, that such transfers shall be pro rata, based on the proportion of the Common Reserve Account Requirement and each Separate Series Reserve Account Requirement to the sum of the Common Reserve Account Requirement and all Separate Series Reserve Account Requirements;

Third, in the Sewer Fund, a reasonable and necessary amount for working capital and operating reserves;

Fourth, to the Subordinate Obligation Account, the amount, if any, equal to all Subordinate Obligation Requirements theretofore accrued and unpaid and not met from any other source and to accrue and become payable during the succeeding calendar month and not met from any other source;

Fifth, to the Reimbursable Obligation Account, the amount, if any, equal to all Reimbursable Obligation Requirements payable on such day and not met from any other source;

Sixth, to the Renewal and Replacement Account, an amount equal to 1/12th of the amount provided in the Annual Budget of the City and County to be credited to such Account during such Fiscal Year; provided, however, that if any such monthly allocation to the Renewal and Replacement Account is less than the required amount, the amount of the next succeeding monthly payment must be increased by the amount of such deficiency;

Seventh, to the Wastewater System Facility Charge Account, such amount as is set forth in a written certificate to reimburse such Account for the amount of any transfer to the Debt Service Account made pursuant to the Bond Resolution;

Eighth, to the Rate Stabilization Account, such amount as is provided in the Annual Budget to be transferred to the Rate Stabilization Account in such month or so much thereof as is available; provided, however, that if any such monthly allocation to the Rate Stabilization Account is less than the required amount, the amount of the next succeeding monthly payment must be increased by the amount of such deficiency; and

Ninth, to the Wastewater General Account, such amount as is forth in a written certificate of the City and County.

The City and County may, if provided in a Series Resolution or a Series Certificate relating to such Bonds, directly pay out of the Sewer Fund reimbursements to providers of Support Facilities which have been drawn upon in the same priority and order as payments from the Sewer Fund to the Debt Service Account, the Common Reserve Account, each Separate Series Reserve Account or other Funds and Accounts as if such payments were part of such Funds and Accounts.

Purposes of the Various Funds and Account

Sewer Fund - Debt Service Account. The principal of and interest on, any Sinking Fund Installment, the Redemption Price of and interest on the Bonds and interest on Bond Anticipation Notes are to be paid out of the Debt Service Account in the Sewer Fund to each Paying Agent on or before the respective due dates.

Amounts accumulated in the Debt Service Account by reason of the payment of any Sinking Fund Installment may be applied by the City and County, on or prior to the 60th day preceding the due date of such Sinking Fund Installment, to: (i) the purchase of Bonds of the maturity for which such Sinking Fund Installment was established, or (ii) the redemption of such Bonds at the applicable Redemption Price, if then redeemable by their terms. All such purchases of Bonds are to: (i) be made at prices not exceeding the applicable Redemption Price of such Bonds plus accrued interest; (ii) be made as arranged by the City and County in such manner and from such sellers or brokers at such prices as the City and County may determine; and (iii) be made to insure that delivery of the Bonds so purchased will not occur later than the 60th day next preceding the redemption date to which the Sinking Fund Installment is to be applied. The applicable Redemption Price of any Bonds (or principal amount of maturing Bonds) so purchased or redeemed is deemed to constitute part of the Debt Service Account until such Sinking Fund Installment date, for the purpose of calculating the amount of such Account. As soon as practicable after the 60th day preceding the due date of any such Sinking Fund Installment, the City and County must proceed to call for redemption on such due date Bonds of the maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as is necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment after making allowance for any Bonds purchased or redeemed pursuant to the Bond Resolution which the City and County has applied as a credit against such Sinking Fund Installment as provided in the Bond Resolution.

Upon any purchase or redemption pursuant to the Bond Resolution of Bonds of any Series and maturity for which Sinking Fund Installments shall have been established: (i) if the principal amount of the Bonds so purchased is less than or equal to the next succeeding Sinking Fund Installment for such Series there is to be credited to the next such Sinking Fund Installment an amount equal to the principal amount of the Bonds of such Series so purchased; and (ii) if the principal amount of the Bonds so purchased is greater than the next succeeding Sinking Fund Installment, there is to be credited toward each such Sinking Fund Installment thereafter to become due an amount bearing the same ratio to such Sinking Fund Installment as the total principal amount of such Bonds so purchased or redeemed bears to the total principal amount of all such Sinking Fund Installments to be so credited or, at the option of the City and County, an amount equal to the next succeeding Sinking Fund Installment. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

The amount, if any, credited to the Debt Service Account from a Series Improvement Interest Subaccount is to be applied to the payment of interest on the Bonds as the same becomes due and payable as provided in the Bond Resolution.

Sewer Fund - Common Reserve Account. If on the day preceding any principal or interest payment date, the amount in the Debt Service Account is less than the Accrued Debt Service for all Bonds then Outstanding which are entitled to the benefit of the Common Reserve Account, the City and County will pay out of the Common Reserve Account to each Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied are to be derived first, from cash or Investments Securities on credit to the Common Reserve Account and second, from draws or demands on Support Facilities held as a part of the Common Reserve Account, such draws or demands to be made *pro rata* among all such Support Facilities based on

the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in the Common Reserve Account exceed the Common Reserve Account Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Account or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in the Common Reserve Account, together with the amount in the Debt Service Account attributable to Bonds entitled to the benefit of the Common Reserve Account, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to the Common Reserve Account are to be transferred to the Debt Service Account and applied to make such payment. Prior to such transfer, all Investment Securities held in the Common Reserve Account will be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price, if any, of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Common Reserve Account are refunded in whole or in part or is otherwise deemed paid within the meaning of the Bond Resolution, moneys may be withdrawn from the Common Reserve Account to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; provided that immediately after such withdrawal or transfer there must be on credit to the Common Reserve Account for those Bonds of the Series of Bonds not refunded an amount equal to the Common Reserve Account Requirement for the Bonds entitled to the benefit of the Common Reserve Account then Outstanding after taking into account such refunding or payment.

The City and County may determine in the Series Resolution authorizing a Series of Bonds or a Series Certificate related to a Series of Bonds that such Series of Bonds will not be entitled to the benefit of the Common Reserve Account, in which case no amount will be required from the proceeds of such Series of Bonds for credit to the Common Reserve Account and no amount will be payable from the Common Reserve Account to pay amounts due or payable with respect to such Series of Bonds.

The Common Reserve Account Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Sewer Fund - Separate Series Reserve Accounts. If on the day preceding any principal or interest payment date, the amount in the Debt Service Account is less than Accrued Debt Service for the Bonds of a Series then Outstanding which are entitled to the benefit of a Separate Series Reserve Account, the City and County will pay out of such Separate Series Reserve Account to the Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied shall be derived first, from cash or Investments Securities on credit to such Separate Series Reserve Account and second, from draws or demands on Support Facilities held as a part thereof, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in any Separate Series Reserve Account exceed the applicable Separate Series Reserve Account Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Account or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in any Separate Series Reserve Account, together with the amount in the Debt Service Account attributable to Bonds entitled to the benefit of such Separate Series Reserve Account, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to such Separate Series Reserve Account are to be transferred to the Debt Service Account and applied to make such payment. Prior to such transfer, all Investment Securities held in such Separate Series Reserve Account will be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Separate Series Reserve Account are refunded in whole or in part or are otherwise deemed paid within the meaning of the Bond Resolution, moneys may be withdrawn from such Separate Series Reserve Account to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; *provided* that immediately after such withdrawal or transfer there must be on credit to such Separate Series Reserve Account an amount equal to the Separate Series Reserve Account Requirement for the Bonds then Outstanding which are entitled to the benefit of such Separate Series Reserve Account after taking into account such refunding or payment.

Each Separate Series Reserve Account Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Certain provisions of the Bond Resolution relating to Separate Series Reserve Account may be modified in whole or in part with respect to any Series of Bonds entitled to the benefits of a Separate Series Reserve Account.

Sewer Fund - Rebate Account. If and to the extent required by the Code, an Authorized Officer must periodically, at such times as may be required to comply with the Code, determine the amount required to be rebated or otherwise paid to the Department of the Treasury of the United States of America with respect to each Series of Tax-exempt Bonds and thereafter (i) transfer from any of the Funds and Accounts pledged or held under the Bond Resolution, other than the Debt Service Account, the Subordinate Obligation Account and the Reimbursable Obligation Account and credit to the Rebate Account an amount equal to all or a portion of such amount to be rebated with respect to such Series of Bonds and (ii) pay out of the Rebate Account to the Department of the Treasury of the United States of America the amount, if any, required by the Code to be rebated or otherwise paid. Moneys in the Rebate Account and the subaccounts therein are not available for the benefit of the Holders of the Bonds and are not pledged to the payment of the Bonds or the interest thereon.

If and to the extent necessary to comply with any covenant established in a Series Resolution authorizing a Series of Bonds or in a Series Certificate relating to such Series of Bonds regarding maintaining the exclusion of interest on Tax-exempt Bonds from gross income for Federal income taxation purposes, the City and County may establish a subaccount in the Rebate Account with respect to such Series of Bonds or provide for the establishment such subaccount in such Series Resolution or in such Series Certificate.

Sewer Fund - Rate Stabilization Account. The amount of moneys and Investment Securities to be maintained from time to time in the Rate Stabilization Account is to be provided for in the Annual Budget. Moneys and Investment Securities may be transferred to the Rate Stabilization Account as provided in the Annual Budget from (i) the Sewer Fund in the order of priority provided in the Bond Resolution, or (ii) the Wastewater General Account as provided in the Bond Resolution. Moneys and Investment Securities credited to the Rate Stabilization Account are to be transferred to the Sewer Fund at the times and in the amounts as may be provided in the Annual Budget for the purposes of stabilizing the rates and charges of the Wastewater System.

Sewer Fund - Renewal and Replacement Account. Moneys on credit to the Renewal and Replacement Account may be applied to the cost of the construction of improvements to or reconstruction of the Wastewater System, emergency repairs of the Wastewater System, and major or extraordinary repairs, renewals or replacements of the Wastewater System, in each case to be set forth in the Annual Budget; (i) to restore or prevent physical damage to the Wastewater System or any part thereof; (ii) for the safe and efficient operation of the Wastewater System; or (iii) to prevent loss of Revenues.

If on the day preceding any interest payment date the moneys in the Debt Service Account, after making the transfer from the Common Reserve Account from each Separate Series Account as provided for in the Bond Resolution and from the Wastewater General Account as provided for in the Bond Resolution, are insufficient to pay the interest, principal and redemption price becoming due on the Bonds, the City and County must transfer from the Renewal and Replacement Account for credit to the Debt Service Account the amount necessary (or all the moneys in such Fund if less than the amount necessary) to satisfy such deficiency.

If on each January 1 and July 1 (i) the moneys, Investment Securities and the amount of Support Facilities in the Common Reserve Account are less than the Common Reserve Account Requirement, and the transfer referred to in the preceding paragraph has been made, the City and County must transfer from the Renewal and Replacement Account for credit to the Common Reserve Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency; and (ii) the moneys, Investment Securities and amount of Support Facilities in any Separate Series Reserve Account are less than the Separate Series Reserve Account Requirement for such Separate Series Reserve Account, and the transfer referred to in the preceding paragraph has been made, the City and County must transfer from the Renewal and Replacement Account for credit to such Separate Series Reserve Account the amount necessary (or all the moneys in said Account if less than the amount necessary) to eliminate such deficiency; *provided, however*, that such transfers will be *pro rata*, based on the proportion of the Common Reserve Account Requirement and each Separate Series Reserve Account Requirement to the sum of the Common Reserve Account Requirement and all Separate Series Reserve Account Requirements.

If the moneys on credit to the Subordinate Obligation Account are less than the Subordinate Obligation Requirement, and the transfers referred to in the preceding two paragraphs have been made, the City and County will transfer from the Renewal and Replacement Account to the Subordinate Obligation Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

If the moneys on deposit in the Reimbursable Obligation Account are less than the Reimbursable Obligation Requirement, and the transfers referred to in the preceding three paragraphs have been made, the City and County must transfer from the Renewal and Replacement Account to the Reimbursable Obligation Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

Sewer Fund - Subordinate Obligation Account. The City and County must at all times maintain in the Subordinate Obligation Account an amount equal to the Subordinate Obligation Requirement. Moneys on deposit in the Subordinate Obligation Account will be applied by the City and County solely in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in the resolution, indenture or other instrument of the City and County securing or evidencing such Subordinate Obligations. Any moneys credited to the Subordinate Obligation Account are immediately free and clear of the lien and pledge created by the Bond Resolution.

Sewer Fund - Reimbursable Obligation Account. The City and County must at all times maintain in the Reimbursable Obligation Account an amount equal to the Reimbursable Obligation Requirement. Moneys on deposit in the Reimbursable Obligation Account will be applied by the City and County solely to reimburse the General Fund of the City and County for payment of debt service due on Reimbursable Obligation issued or to be issued by the City and County with respect to the Wastewater System. Any moneys deposited in the Reimbursable Obligation Account are immediately free and clear of the lien and pledge created by the Bond Resolution.

Sewer Fund - Wastewater General Account. The City and County will transfer from the Wastewater General Account: (i) to the Debt Service Account, the Common Reserve Account and each Separate Series Reserve Account the amount necessary (or all the moneys in the Wastewater General Account if less than the amount necessary) to satisfy any deficiencies in payments to such Accounts required by the Bond Resolution; (ii) in the event of any transfer of moneys from the Common Reserve Account or any Separate Series Reserve Account to the Debt Service Account, to the Common Reserve Account or such Separate Series Reserve Account the amount of any resulting deficiency in such Account; (iii) provided that all transfers referred to in clauses (i) and (ii) above have been made, to the Renewal and Replacement Account the amount, if any, necessary to satisfy the deficiency in such Fund; (iv) such amount as the City and County may, in its discretion, determine to set aside in reserve for meeting the deficiencies referred to in clauses (i) through (iii) above; (v) provided that all transfers and reserves therefor referred to in clauses (i) through (iv) above have been made, to the Subordinate Obligation Account the amount, if any, necessary to satisfy any deficiency in meeting the Subordinate Obligation Requirement; and (vi) provided that all transfers and reserves therefor referred to in clauses (i) through (v) above have been made, to the Reimbursable Obligation Account, the amount, if any, necessary to eliminate any deficiency in meeting the Reimbursable Obligation Requirement.

Amounts in the Wastewater General Account not required to meet a deficiency referred to in the preceding paragraph may be applied to the following purposes in the following order of priority:

- (1) the Costs of Improvements, or the provision of one or more reserves therefor;
- (2) for transfer to the Rate Stabilization Account in the Sewer Fund such amounts as may be provided in the Annual Budget for the purpose of stabilizing rates and charges;
- (3) the purchase at such price or prices as the City and County may deem advisable or redemption of any Bonds and expenses of such purchase or redemption at any time; and
- (4) for any other lawful purpose of the City and County.

Sewer Revenue Bond Improvement Fund - Improvement Account. As soon as practicable on the date of delivery of the Bonds of a Series, the amount required pursuant to the Series Resolution or Series Certificate will be deposited in the Improvement Fund for credit to the Improvement Account. In addition, the City and County will deposit in the Improvement Fund for credit to the Improvement Account such moneys other than proceeds of the Bonds as the City and County may determine to be proper or appropriate to pay the Costs of Improvements.

The Series Resolution authorizing the issuance of any Series of Bonds (exclusive of Refunding Bonds) may create and establish one or more separate special series improvement subaccounts (a "Series Improvement Subaccount") in the Improvement Account, with such designation as may be appropriate. In the event any interest on such Bonds is to be capitalized from the proceeds of such Bonds, a special series subaccount must be created in the Improvement Account (a "Series Improvement Interest Subaccount") with such designation as may be appropriate.

Moneys, including proceeds of the Bonds of a Series, which are credited to a Series Improvement Subaccount are to be applied to the payment of the Costs as are specified in the applicable Series Resolution or Series Certificate. Any balance remaining in such Series Improvement Subaccount upon completion of payment of such Costs may be used for any lawful purpose of the City and County; *provided* that the City and County has obtained an Opinion of Counsel that any such application will not impair the exemption from Federal income taxation of interest on any of the Tax-exempt Bonds.

Moneys credited to a Series Improvement Interest Subaccount are to be used for the purpose of paying interest on the Bonds of designated Series. On or before the fifth (5th) day preceding the end of the month next preceding the maturity of an installment of interest on the Bonds for the payment of which moneys have been credited to such Series Improvement Interest Subaccount, the City and County must transfer from a Series Improvement Interest Subaccount to the Debt Service Account an amount which, together with any moneys theretofore held in the Debt Service Account, are sufficient to pay such next maturing installment of interest on such Bonds.

Payments from the Improvement Account are to be made as specified in the Series Resolution authorizing the issuance of a Series of Bonds or a Series Certificate related to a Series of Bonds.

Moneys, including proceeds of the Bonds, in the Improvement Account, pending their application as provided in the Bond Resolution and Series Resolution and Series Certificate, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the further security of the Bonds until paid out or transferred as provided in the Bond Resolution. In the event that there is an insufficiency in the Debt Service Account to pay Debt Service after all transfers, other than a transfer from the Wastewater System Facility Charge Account, have been made pursuant to and in accordance with the Bond Resolution, the City and County must transfer from the Improvement Account such amount (or all remaining amounts in such Improvement Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Account, which, together with the amounts then on credit to the Debt Service Account, is sufficient to pay Debt Service.

Sewer Fund – Wastewater System Facility Charge Account. Amounts in the Wastewater System Facility Charge Account and any account therein, pending their application, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the

further security of the Bonds until paid out or transferred as provided in the Bond Resolution. In the event that there is an insufficiency in the Debt Service Account to pay Debt Service after all transfers have been made pursuant to and in accordance with the Bond Resolution, the City and County must transfer from the Wastewater System Facility Charge Account such amount (or all remaining amounts in the Wastewater System Facility Charge Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Account, which, together with the amounts then on deposit in the Debt Service Account, is sufficient to pay Debt Service. The amount of any such transfer must at the earliest practicable date be reimbursed to the Wastewater System Facility Charge Account as provided in the Bond Resolution.

Amounts held in the Wastewater System Facility Charge Account are to be expended for the purposes specified in Section 6-47.1 of the City Code.

Investment of Funds

Moneys in the Debt Service Account may, to the fullest extent practicable and reasonable, be invested and reinvested solely in noncallable Investment Securities which are Government Obligations, FNMAs or FHLMCs (as such terms are defined in the definition of Investment Securities) and which mature or are subject to redemption at the option of the holder thereof on or prior to the respective dates when the moneys in Debt Service Account will be required for the purposes intended. Moneys in the Common Reserve Account or any Separate Series Reserve Account not required for immediate disbursement for the purpose for which the Common Reserve Account or such Separate Series Reserve Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested solely in, and obligations credited to the Common Reserve Account or such Separate Series Reserve Account must be, investments specified in items (i) to (vi), inclusive, of the definition of Investment Securities and which mature or are available at par at or prior to five (5) years from the date of investment thereof.

Moneys in the Sewer Fund not required for immediate disbursement for the purpose for which such Fund is created may, to the fullest extent practicable and reasonable, be invested and reinvested, to the extent allowed by law, solely in, and obligations deposited in such Fund will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof, not later than such times as will be necessary to provide moneys when needed to provide payments from such Fund.

Moneys in the Improvement Account, other than a Series Improvement Interest Subaccount therein, not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

Moneys in a Series Improvement Interest Subaccount in the Improvement Account not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account shall be, noncallable Investment Securities which are Government Obligations, FNMAs or FHLMCs (as such terms are defined in the definition of Investment Securities) that mature or are subject to redemption at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

To the extent permitted in the Bond Resolution, all income received from the investment or reinvestment of moneys in the Funds and Accounts established under the Bond Resolution will be deposited in the respective Fund or Account from which such investments are made and applied as a credit against the next succeeding deposit or credit required to be made pursuant to the Bond Resolution; provided however, that except as to the Subordinate Obligation Account and the Reimbursable Obligation Account, all or a portion of the income received from the investment or reinvestment of moneys in any such Fund and Account may be deposited in the Sewer Fund or the Improvement Account, including a Series Improvement Interest Subaccount therein; and *provided, further, however*, that all income received from the investment or reinvestment of moneys in any Series Improvement Interest Subaccount must be deposited in the Debt Service Account.

Neither the Director of Budget and Fiscal Services nor any Paying Agent shall be liable for any depreciation in value of any investments made by the City and County.

Valuation of Investment Securities

In computing the amount in any Fund or Account, Investment Securities therein are to be valued at cost or accreted value, whichever is lower, exclusive of accrued interest. The City and County is to determine the value of Investment Securities held in any Fund or Account as frequently as it deems necessary, but not less often than annually.

Depositaries

All moneys held by the City and County or any Depositary under the provisions of the Bond Resolution are to be held in trust and applied only in accordance with the provisions of the Bond Resolution, and each of the Funds and Accounts established by the Bond Resolution shall be a trust fund.

Each Depositary must be a bank or trust company organized under the laws of any state of the United States or a national banking association having capital stock, surplus and undivided earnings of \$5,000,000 or more and willing and able to accept such office on reasonable and customary terms and authorized by law to act in accordance with the provisions of the Bond Resolution.

Concerning Depositaries and Paying Agents

Qualifications and Appointment. The Director of Budget and Fiscal Services may appoint one or more Paying Agents and Depositaries as of the date of issuance and delivery of the first Series of Bonds and may at any time or from time to time appoint one or more other Paying Agents or other Depositaries having the qualifications of a depositary, as described in the Bond Resolution; provided however, the Director of Budget and Fiscal Services may be designated Paying Agent and/or Depositary. Each Paying Agent, other than the Director of Budget and Fiscal Services, and each Depositary, other than the Director of Budget and Fiscal Services, shall signify its acceptance of the duties and obligations imposed upon it by the Bond Resolution by executing and delivering to the City and County and the Director of Budget and Fiscal Services a written acceptance thereof.

Paying Agents and Depositaries May Buy, Hold, Sell or Deal in Bonds and Other Indebtedness of the City and County. Each Paying Agent and each Depositary and its respective directors, officers, employees or agents, may in good faith buy, sell, own, hold and deal in any of the Bonds issued under the provisions of the Bond Resolution and may join any action which any Holder of a Bond may be entitled to take, with like effect as if such Paying Agent or Depositary were not a Paying Agent or any Depositary, as the case may be, under the Bond Resolution. Any Paying Agent or any Depositary may in good faith hold any other form of indebtedness of the City and County; own, accept or negotiate any drafts, bills of exchange, acceptances or obligations of the City and County, and make disbursements for the City and County and enter into any commercial or business arrangement therewith.

Reimbursement of Paying Agents and Depositaries for Fees, Expenses and Charges. Each Paying Agent and each Depositary shall be entitled to reasonable fees and to reimbursement by the City and County for all expenses and charges reasonably incurred by it in the performance of its duties. No Paying Agent nor Depositary shall have a lien for such fees and reimbursement on the moneys pledged to secure the Bonds under the Bond Resolution at any time held by it, prior to the lien or claim of the Holders of the Bonds on all such moneys.

Covenants

The City and County has covenanted and agreed in the Bond Resolution with the Holders of all Bonds issued pursuant to the Bond Resolution as follows:

Maintenance of the Properties of the Wastewater System; Keeping the System in Good Repair. The Department will: (i) maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the

Wastewater System and all additions and betterments thereto and extensions thereof, and every part and parcel thereof in good repair, working order and condition, (ii) from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto, so that at all times the business carried on in connection therewith shall properly and advantageously be conducted, and (iii) comply, or cause to be complied with the terms and conditions of any permit or license for the Wastewater System or any part thereof issued by any federal or state governmental agency or body and with any federal or state law or regulation applicable to the construction, operation, maintenance and repair of the Wastewater System or requiring a license, permit or approval therefor.

Rates and Charges. The City and County will at all times fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues will be not less than the Net Revenue Requirement for such Fiscal Year (“*Rate Covenant*”). The failure in any Fiscal Year to comply with the foregoing *Rate Covenant* does not constitute an Event of Default if the City and County complies with requirements described in the next paragraph.

Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the *Rate Covenant* and must by a written certificate make a determination with respect to such compliance. Such review may take into consideration the completion of any uncompleted Improvement and the issuance of future Series of Bonds if necessary to finance the completion of such Improvements. Such written certificate must set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, and must be filed with the City Clerk on or before July 1 in each year. If it is determined in such written certificate that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with the *Rate Covenant* and will cause additional Revenues to be collected in such following and later Fiscal Years sufficient to eliminate the amount of any deficiency at the earliest practicable time, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such opinion. The City Council shall as promptly as practicable but no later than the 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer’s recommendation, adopt and place in effect a schedule of fees, rates and charges as so determined or recommended pursuant to the Bond Resolution.

Sale, Lease or Other Disposition of Properties of the Wastewater System. The properties of the Wastewater System may not be sold, mortgaged, leased or otherwise disposed of except as described below.

The properties of the Wastewater System may be sold, leased, or otherwise disposed of in their entirety if simultaneously with such sale, lease or other disposition thereof provision is made for the payment of all Bonds then Outstanding and such Bonds are no longer deemed Outstanding within the meaning of the Bond Resolution.

Any portion of the properties of the Wastewater System may be sold, leased, or otherwise disposed of on such terms and conditions as may be determined by the City and County if the value of such portion of the properties as of the date of such sale, lease or disposition does not exceed five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department. Any part of the properties of the Wastewater System having a value as of the date of the sale, lease or disposition which exceeds five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department may be sold, leased, or otherwise disposed of if the Consulting Engineer certifies to the City and County in writing that the terms and conditions of the proposed sale, lease or other disposition of any such properties are fair and reasonable, and that the estimated Revenues to be derived from the remaining properties of the Wastewater System, after taking into consideration the use by the Department of the proceeds of such proposed sale, lease or other disposition of such properties, will be sufficient to enable the City and County to comply with all covenants and

conditions of the Bond Resolution. Proceeds of any sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this paragraph are to be paid into the Debt Service Account and applied to the purchase or redemption of Bonds or into the Sewer Fund and applied by the City and County for the purpose of constructing extensions, betterments or improvements to the Wastewater System as the City and County may determine.

Surplus lands, crops, timber, buildings and any other portion of the works, plant and facilities of the Wastewater System and real and personal property comprising a part thereof, which, in the opinion of the Director of Environmental Services, have become unserviceable, inadequate, obsolete, worn out, or unfit to be used in the operation of the Wastewater System, or no longer necessary, material to, or useful in such operation may be sold, leased, or otherwise disposed of. Proceeds of any such sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this paragraph are to be paid into the Sewer Fund.

If permitted by the laws of the State, the City and County may transfer without consideration the properties comprising the Wastewater System to a public corporation or political subdivision of the State, provided such corporation or subdivision assumes all of the City and County's or the Department's obligations and duties under the Bond Resolution.

In the event that any part of the properties of the Wastewater System is transferred from the City and County through the operation of law (including condemnation), any moneys received by the City and County as a result of such transfer are to be paid: (i) if such proceeds are not in excess of \$250,000, into the Sewer Fund; or (ii) if such proceeds are in excess of \$250,000: (a) into the Debt Service Account and applied to the purchase or redemption of Bonds; or (b) into the Renewal and Replacement Account and applied by the City and County for the purpose of constructing replacements, extensions, betterments or improvements to the Wastewater System, as the City and County shall determine.

Insurance. Except as provided for in the next paragraph, the Department must keep, or cause to be kept, the works, plants and facilities comprising the properties of the Wastewater System and the operations thereof insured to the extent available at reasonable at reasonable cost with responsible insurers, with policies payable to the City and County or the Department, against risks of direct physical loss, damage to or destruction of the above-ground structures, and the equipment and contents therein, of the Wastewater System arising from accidents, casualties or negligence, and other causes customarily insured against, at least to the extent that similar insurance is usually carried by utilities operating like properties, including liability insurance and workman's compensation insurance; provided, however, that any time while any contractor engaged in constructing any part of the Wastewater System is fully responsible for such insurance, the Department is not required to keep such part of the Wastewater System insured. All policies of insurance shall be for the benefit of the Holders of the Bonds and the City and County or the Department as their respective interests may appear.

In the event of any loss or damage to the properties of the Wastewater System covered by insurance, the Department will: (i) with respect to each such loss, promptly repair and reconstruct to the extent necessary to the proper conduct of the operations of the Wastewater System the lost or damaged portion thereof and shall apply the proceeds of any insurance policy or policies covering such loss or damage for that purpose to the extent required therefor, unless, in case of loss or damage involving \$250,000 or more, the Department determines that such repair and reconstruction will not be undertaken; and (ii) if the Department does not use the entire proceeds of such insurance to repair or reconstruct such lost or damaged property, the proceeds of such insurance policy or policies or any portion thereof not used for such repair or reconstruction, as the case may be, are to be paid into the Sewer Fund. If the Department does not obtain insurance from responsible insurers as provided for in the Bond Resolution, the City and County or the Department must self-insure; provided, however, that if the Department fails to carry insurance against any of the risks normally insured against by operators of facilities similar to the Wastewater System, it must secure the concurrence of an independent insurance consultant. In making its decision whether to concur in such self-insurance, the independent insurance consultant must (i) make an estimate of the added financial risks, if any, assumed by the Department as a result of the self-insurance; (ii) consider the availability of commercial insurance, the terms upon which such insurance is available and the costs of such available insurance, and the effect of such terms and costs upon the Department's costs and charges for its services; and (iii) determine whether the added financial risk, if any, being assumed by the Department is prudent in light of the savings to be realized from such self-insurance or in light of the general availability of insurance.

The Department may include insurance required by the Bond Resolution as part of a blanket insurance policy of the City and County.

Consulting Engineer. The City Council, the Director of Environmental Services or the Director of Budget and Fiscal Services may from time to time retain and appoint, as Consulting Engineer, an independent consulting engineer or engineering firm or corporation having special skill, knowledge and experience in analyzing the operations of wastewater systems, preparing rate analyses, forecasting the loads and revenues of wastewater systems, preparing feasibility reports respecting the financing of wastewater systems and advising on the operation of wastewater facilities, who shall be available to advise the Department, upon request, and to make such investigations and determinations as may be necessary from time to time under the provisions of the Bond Resolution.

Books of Account; Annual Audit. The Department will maintain and keep proper books of account relating to the Wastewater System and in accordance with generally accepted accounting principles. Within 180 days after the end of each Fiscal Year commencing with the Fiscal Year ending June 30, 2000, the Department will cause such books of account to be audited by an independent certified public accountant. The audit required by the Bond Resolution may be part of a comprehensive audit of the City and County, *provided* that the Wastewater System in such audit is treated as an "enterprise fund" and the revenues and expenses of the Wastewater System are stated in a manner which permits identification by category of the sources and uses of the Revenues. A copy of each audit report prepared in conformity with generally accepted accounting principles must be filed promptly with the City and County and sent to any Bondholder filing with the Director of Environmental Services a written request for a copy thereof. and to any Rating Agency which has rated any Bonds.

To Pay Bonds Punctually. The City and County will duly and punctually pay, or cause to be paid, but only from the Revenues, income and other funds specified in the Bond Resolution, the principal and Redemption Price (if any) of, and interest on, each and every Bond on the dates and at the places, and in the manner provided in the Bonds according to the true intent and meaning thereof, and the City and County will faithfully do and perform and at all times fully observe and keep any and all of its covenants, undertakings, stipulations and provisions contained in the Bonds and in the Bond Resolution.

Payment of Taxes and Other Claims. The Department must from time to time duly pay and discharge, or cause to be paid and discharged, all taxes, assessments and other governmental charges, or payments in lieu thereof, lawfully imposed upon the properties of the Wastewater System (or any part thereof) or upon the Net Revenues or income received therefrom when the same become due, as well as all lawful claims for labor, material and supplies, which, if not paid, might become a lien or charge upon said properties or any part thereof, or upon the Revenues derived from the ownership or operation of the Wastewater System, or which might in any way impair the security of the Bonds, except any such assessments, charges or claims which the Department in good faith contests as to validity.

Extension of Payment of Bonds. The City and County will not, directly or indirectly, extend or assent to the extension of the maturity of any of the Bonds or the time of payment of any claims for interest by the purchase of such Bonds, coupons, if any, or claims for interest or by any other arrangement and in case the maturity of any of the Bonds or the time for payment of any such claims for interest is extended, such Bonds or claims for interest will not be entitled, in case of any default under the Bond Resolution, to the benefit of the Bond Resolution or to any payment out of any assets of the City and County or the funds (except funds held in trust for the payment of particular Bonds or claims for interest pursuant to the Bond Resolution) held by the Paying Agents, except subject to the prior payment of the principal of all Bonds issued and Outstanding the maturity of which has not been extended and of such portion of the accrued interest on the Bonds as shall not be represented by such extended claims for interest.

Sound Improvements and Extensions. The Department will not expend any of the income, revenues, receipts, profits and other moneys derived by it from the ownership or operation of the Wastewater System for any renewals, replacements, additions, betterments and improvements to, or extensions of, the Wastewater System which, in the sole opinion of the Director of Environmental Services, will not properly and advantageously contribute to the conduct of the business of the Wastewater System in an efficient and economical manner unless

required to do so to permit the continued operation of the Wastewater System or to preserve or protect the Wastewater System.

Annual Budget. Not later than May 31 before the beginning of any Fiscal Year the City and County or the Department will prepare a preliminary budget of Operation and Maintenance Expenses of the Wastewater System and reserves therefor for the ensuing Fiscal Year. Each such budget and each Annual Budget will include, in addition to provisions for all anticipated Operation and Maintenance Expenses, provision for the payments required to be made to the Renewal and Replacement Account, provided that such payments shall in the aggregate at least equal the amount described below. Such preliminary budget and any Annual Budget may set forth such additional material as the City and County or the Department may determine.

Except as described below, on or before the 15th day of each such Fiscal Year, the City and County must finally adopt the Annual Budget for such year. The City and County may at any time adopt an amended Annual Budget for the remainder of the then current Fiscal Year. Copies of the Annual Budget and of any amended Annual Budget are to be made available for inspection by the Bondholders and are to be sent to each Rating Agency.

If for any reason the City and County does not adopt the Annual Budget before the 15th day of any Fiscal Year, the budget for the preceding Fiscal Year is deemed to be in effect for such Fiscal Year until the Annual Budget for such Fiscal Year is adopted. For any purpose of computation under the provisions of the Bond Resolution, the budget for the preceding year is deemed to have been adopted for any Fiscal Year until the Annual Budget for such year is adopted.

Every preliminary budget, Annual Budget and amended Annual Budget must: (i) set forth in reasonable detail amounts required for repair, replacement or reconstruction of the Wastewater System and major or extraordinary repairs, renewals or replacements of the Wastewater System, if any, for the period to be covered by such budget; (ii) specify the amounts to be deposited in the Renewal and Replacement Account, the Subordinate Obligation Account, the Reimbursable Obligation Account and the Wastewater General Account, and the amounts to be maintained in the Sewer Fund for working capital and operating reserves and in the Rate Stabilization Account for rate stabilization purposes, if any, for such purposes for such period, (iii) specify the amounts to be transferred from the Wastewater General Account to the Rate Stabilization Account and to other Funds and Accounts; and (iv) project the amounts required for such purposes for the next five Fiscal Years in such format as the Director of Environmental Services may determine. A copy of each such report is to be filed and maintained in the records of the City and County.

Events of Default

Each of the following events constitutes an Event of Default under the Bond Resolution:

- (a) if payment of the principal and Redemption Price, if any, of any Bond, is not punctually made when due and payable, whether at the stated maturity thereof or upon proceedings for the redemption thereof (whether by voluntary redemption or a mandatory sinking fund redemption or otherwise);
- (b) if payment of the interest on any Bond is not punctually made when due;
- (c) if the provisions of any Series Resolution with respect to mandatory Sinking Fund Installment payments or the redemption of Term Bonds therefrom, as the case may be, are not punctually complied with at the time and in the manner specified in such Series Resolution;
- (d) if the City and County or the Department fails to duly and punctually perform or observe any other of the covenants, agreements or conditions contained in the Bond Resolution or in the Bonds, on the part of the City and County or the Department to be performed, and such failure continues for 90 days after written notice thereof from the Holders of not less than 20% of the Bonds then Outstanding; provided that, if such failure is such that it cannot be corrected within

such 90-day period, it will not constitute an Event of Default if corrective action is instituted within such period and diligently pursued until the failure is corrected; and

(e) if the City and County: (i) admits in writing its inability to pay its debts generally as they become due; or (ii) files a petition in bankruptcy or seeking a composition of indebtedness under the provisions of any Federal or state bankruptcy or similar law; or (iii) makes an assignment for the benefit of its creditors; or (iv) files a petition or any answer seeking relief under the provisions of any Federal or state bankruptcy or similar law; or (v) consents to the appointment of a receiver of the whole or any substantial part of the Wastewater System; or (vi) consents to the assumption by any court of competent jurisdiction under the provisions of any other law for the relief or aid of debtors of custody or control of the City and County or the Department, or of the whole or any substantial part of the Wastewater System.

Notice to Bondholders of Event of Default

Immediately after the occurrence of an Event of Default or within 30 days after any Paying Agent knows of any other Event of Default, the Paying Agent or Paying Agents shall give notice of all such Events of Default to the Bondholders, all other Paying Agents and Support Facility Providers, and each Rating Agency, in the manner as provided for in the Bond Resolution, unless such Events of Default shall have been cured before the giving of such notice.

Acceleration of Bonds

If an Event of Default shall happen and shall not have been remedied, then and in every such case the Holders of not less than 25% in principal amount of the Bonds then Outstanding, by notice in writing to the City and County and the Director of Budget and Fiscal Services, may declare the principal of all the Bonds then Outstanding, and the interest accrued thereon, to be due and payable immediately, and upon any such declaration the same shall become and be immediately due and payable. The right of the Holders of not less than 25% in principal amount of the Bonds then Outstanding to make any such declaration, however, shall be subject to the condition that if, at any time after such declaration, but before the Bonds shall have matured by their terms, all overdue installments of interest upon the Bonds, together with interest on such overdue installments of interest to the extent permitted by law and all other sums then payable by the City and County under the Bond Resolution (except the principal of, and interest accrued since the next preceding interest date on, the Bonds due and payable solely by virtue of such declaration) shall either be paid by or for the account of the City and County or provision satisfactory to the Holders of a majority in principal amount of the Bonds then Outstanding shall be made for such payment, and all defaults under the Bonds or under the Bond Resolution (other than the payment of principal and interest due and payable solely by reason of such declaration) shall be cured or be secured to the satisfaction of the Holders of a majority in principal amount of the Bonds then Outstanding or provision deemed by such Holders of the Bonds to be adequate shall be made therefor, then and in every such case the Holders of at least a majority in principal amount of the Bonds then Outstanding, by written notice to the City and County, may rescind such declaration and annul such default in its entirety, but no such rescission shall extend to or affect any subsequent default or impair or exhaust any resulting right or power.

The bond insurers for all Outstanding Bonds and for the Series 2005 Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

Inspection of Books and Records; the City and County to Account as Trustee for Express Trust

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the books of record and account of the Department relating to the Wastewater System and all other records relating thereto shall at all times be subject to the inspection and use of the Holders of at least 25% in principal amount of the Bonds then Outstanding and of their respective agents and attorneys or of any committee therefor.

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the City and County will continue to account, as a trustee of an express trust, for all Revenues and other moneys, securities and funds pledged under the Bond Resolution.

Application of Revenues in an Event of Default

During the continuance of an Event of Default as described in items (a) through (c) of the Events of Default described above or of any other Event of Default resulting in an Event of Default described in items (a) through (c) of the Events of Default described above, the Revenues received by a receiver appointed pursuant to the Bond Resolution as the result of the taking of possession of the business and properties of the Wastewater System, are to be applied by the receiver: first, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver; second, to the then due and overdue payments into the Debt Service Account, including the making up of deficiencies therein; and last, for any lawful purpose in connection with the Wastewater System.

In the event that at any time the funds held by the receiver are insufficient for the payment of the principal and Redemption Price (if any) of, and interest then due on, the Bonds, such funds (other than funds held for the payment or redemption of particular Bonds or coupons) and all Revenues of the Department and other of its moneys received or collected for the benefit or for the account of Holders of the Bonds by the receiver are to be applied as follows:

- (1) Unless the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment to the persons entitled thereto of all installments of interest then due (including any interest on overdue principal) in the order of the maturity of such installments, earliest maturities first, and if the amounts available shall not be sufficient to pay in full any installment or installments of interest maturing on the same date, then to the payment thereof ratably, according to the amount due thereon, to the persons entitled thereto, without any discrimination or preference; and

Third, to the payment to the persons entitled thereto of the principal and premium, if any, due and unpaid upon the Bonds at the time of such payment without preference or priority of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and redemption premium, without any discrimination or preference.

- (2) If the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment of the principal and interest then due and unpaid upon the Bonds without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference.

Whenever moneys are to be applied as described in the foregoing paragraphs, such moneys shall be applied by the receiver at such times, and from time to time, as it in its sole discretion shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future.

If and whenever all overdue installments of interest on all Bonds, together with the reasonable and proper charges, expenses, and liabilities of the Holders of the Bonds, their respective agents and attorneys, and all other sums payable by the City and County under the Bond Resolution including the principal and Redemption Price (if any) of all Bonds which shall then be payable, shall either be paid in full by or for the account of the City and County or provision satisfactory to the receiver shall be made for such payment, and all defaults under the Bond Resolution or the Bonds shall be made good and secured to the satisfaction of the receiver or provision deemed by the receiver to be adequate therefor, the receiver shall pay over to the Department all of its moneys, securities, funds and Revenues then remaining unexpended in the hands of the Bondholders' Committee (except moneys, securities, funds or Revenues deposited or pledged, or required by the terms of the Bond Resolution to be deposited or pledged, with the Director of Budget and Fiscal Services), control of the business and possession of the property of the Department shall be restored to the Department, and thereupon the City and County shall be restored to its former positions and rights under the Bond Resolution, and all Revenues shall thereafter be applied as provided for in the Bond Resolution. No such payment over to the Department by the receiver or resumption of this application of Revenues as provided in the Bond Resolution, shall extend to or affect any subsequent default under the Bond Resolution or impair any right consequent thereon.

Suits at Law or Equity and Mandamus and Appointment of a Receiver

If an Event of Default shall happen and shall not have been remedied, then and in every such case, but subject to the provisions, limitations and conditions as set forth in the Bond Resolution, the Holder of any Bond at the time Outstanding shall be entitled, for the equal benefit and protection of all Holders of the Bonds similarly situated to proceed, protect and enforce the rights vested in such Holder by the Bond Resolution by such appropriate judicial proceeding as such Holder shall deem most effectual to protect and enforce any such right, either by suit in equity or by action of law, whether for the specific performance of any covenant or agreement contained in the Bond Resolution, or in aid of the exercise of any power granted in the Bond Resolution, or to enforce any other legal or equitable right vested in the Holders of Bonds by the Bond Resolution or by law; provided, however, that no judicial proceeding shall be brought seeking the appointment of a receiver to take possession of the Wastewater System or to manage, receive and apply the Revenues unless the Holders of not less than a majority in principal amount of the Bonds then Outstanding or a Bondholders' Committee representing the Holders of not less than a majority in principal amount of the Bonds then Outstanding shall have joined in or consented to such proceeding.

Bondholders' Committee

If an Event of Default shall happen and shall not have been remedied, the Holders of not less than 25% in principal amount of the Bonds then Outstanding may call a meeting of the Holders of Bonds for the purpose of electing a Bondholders' Committee. Such meeting shall be called and proceedings thereat shall be conducted as provided for other meetings of Bondholders pursuant to the Bond Resolution. At such meeting the Holders of not less than a majority of the principal amount of the Bonds then Outstanding must be present in person or by proxy in order to constitute a quorum for the transaction of business, less than a quorum, however, having power to adjourn from time to time without any notice other than that required by the Bond Resolution. A quorum being present at such meeting, the Bondholders present in person or by proxy may, by the votes cast by the Holders of a majority in principal amount of the Bonds so present in person or by proxy, elect one or more persons who may or may not be Bondholders to the Bondholders' Committee which shall act as trustee for all Bondholders. The Bondholders present in person or by proxy at said meeting, or at any adjourned meeting thereof, shall prescribe the manner in which the successors of the persons elected to the Bondholders' Committee at such Bondholders' meeting shall be elected or appointed, and may prescribe rules and regulations governing the exercise by the Bondholders' Committee of the power conferred upon it, and may provide for the termination of the existence of the Bondholders' Committee.

Bondholders May Direct Proceedings

The Holders of not less than a majority in principal amount of the Bonds at the time outstanding are authorized and empowered: (1) to direct the time, method, and place of conducting any proceeding for any remedy available to the holders of the Bonds; or (2) on behalf of the holders of the Bonds then outstanding, to consent to the waiver of any Event of Default or its consequences. No waiver or rescission shall extend to any subsequent or other default, or impair any right consequent thereon.

The bond insurers for all Outstanding Bonds and for the Series 2005 Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

Abandonment of Proceedings; Adverse Determination

No delay or omission of any Holder of Bonds to exercise any right or power arising upon the occurrence of a default under the Bond Resolution, including an Event of Default, shall impair any right or power or shall be construed to be a waiver of any such default or to be an acquiescence therein. Every power and remedy given by the Bond Resolution to the Holders of Bonds may be exercised from time to time and as often as may be deemed expedient by such Holders.

In case the Holders of the Bonds or a Bondholders' Committee formed pursuant to the Bond Resolution shall have proceeded to enforce any right under the Bond Resolution and such proceedings shall have been discontinued or abandoned for any reason, or shall have been determined adversely to the Holders of the Bonds or such Bondholders' Committee, then and in every such case the City and County, and the Holders of the Bonds shall be restored to their former positions and rights under the Bond Resolution, and all rights, remedies and powers of the Holders of the Bonds shall continue as if no such proceedings had been taken.

Amending and Supplementing of Resolution

Amending and Supplementing of Resolution Without Consent of Holders of Bonds. The City and County, from time to time and at any time and without the consent or concurrence of any Holder of any Bond, may adopt (i) a Series Resolution for the purpose of providing for the issuance of Bonds pursuant to the provisions as set forth in the Bond Resolution; (ii) to make any changes, modifications, amendments or deletions to the Bond Resolution which may be required to permit the Bond Resolution to be qualified under the Trust Indenture Act of 1939 of the United States of America; or (iii) if the rights of the Holders of the Bonds then Outstanding shall not be materially adversely affected thereby, a Supplemental Resolution (herein defined and referred to as a "Supplemental Resolution") for any one or more of the following purposes:

1. to make any changes or corrections in the Bond Resolution as to which the City and County shall have been advised by counsel that the same are verbal corrections or changes or are required for the purpose of curing or correcting any ambiguity or defective or inconsistent provision or omission or mistake or manifest error contained in the Bond Resolution, or to insert in the Bond Resolution such provisions clarifying matters or questions arising under the Bond Resolution as are necessary or desirable;
2. to add additional covenants and agreements of the City and County for the purpose of further securing the payment of the Bonds;
3. to surrender any right, power or privilege reserved to or conferred upon the City and County by the terms of the Bond Resolution;
4. to confirm as further assurance any lien, pledge or charge, or the subjection to any lien, pledge, or charge, created or to be created by the provisions of the Bond Resolution;
5. to grant to or to confer upon the Holders of the Bonds any additional rights, remedies, powers, authority or security that lawfully may be granted to or conferred upon them; and
6. to modify in any other respect any of the provisions of the Bond Resolution.

Except for Series Resolutions authorizing the issuance of Bonds pursuant to the Bond Resolution, the City and County shall not adopt any Supplemental Resolution authorized by the foregoing provisions of the Bond Resolution unless in the Opinion of Counsel the adoption of such Supplemental Resolution is permitted by the Bond Resolution and the provisions of such Supplemental Resolution do not materially adversely affect the rights of the Holders of the Bonds then Outstanding.

Amendment of Resolution With Consent of Holders of the Bonds. With the consent of the Holders of not less than a majority of the Bonds then Outstanding, the City and County from time to time and at any time may adopt a resolution amendatory of or supplemental to the Bond Resolution for the purpose of adding any provisions to, or changing in any manner or eliminating any of the provisions of, the Bond Resolution, or modifying or amending the rights and obligations of the City and County thereunder, or modifying or amending in any manner the rights of the Holders of the Bonds then Outstanding; provided, however, that without the specific consent of the Holder of each such Bond which would be affected thereby, no Supplemental Resolution amending or supplementing the provisions of the Bond Resolution shall: (1) change the fixed maturity date for the payment of the principal of any Bond or the dates for the payment of interest thereon or the terms of the redemption thereof, or reduce the principal amount of any Bond or the rate of interest thereon or the Redemption Price (or the redemption premium) payable upon the redemption or prepayment thereof; or (2) reduce the aforesaid percentage of Bonds, the Holders of which are required to consent to any Supplemental Resolution amending or supplementing the provisions of the Bond Resolution; or (3) give to any Bond or Bonds any preference over any other Bond or Bonds secured by the Bond Resolution; or (4) authorize the creation of any pledge of the Revenues and other moneys pledged under the Bond Resolution, prior, superior or equal to the pledge of and lien and charge thereon created in the Bond Resolution for the payment of the Bonds except to the extent provided in the Bond Resolution; or (5) deprive any Holder of the Bonds in any material respect of the security afforded by the Bond Resolution; provided further, however, that without the specific consents of the Holders of not less than a majority in principal amount of the Term Bonds then Outstanding and affected thereby, no Supplemental Resolution amending or supplementing the provisions of the Bond Resolution shall (a) change the amount of any Sinking Fund Installments for the retirement of Term Bonds or the due dates of such installments or the terms for the purchase or redemption thereof from such installments, or (b) reduce the aforesaid percentage of Term Bonds, the Holders of which are required to consent to any such Supplemental Resolution. (Nothing in this paragraph contained, however, shall be construed as making necessary the approval of the Holders of the Bonds of the adoption of any Supplemental Resolution). A modification or amendment with respect to the Sewer Fund or the Debt Service Account or Common Reserve Account or any Separate Series Reserve Account therein shall not be deemed a change in the terms of payments; provided that no such modification or amendment shall, except upon the consent of the Holders of all Bonds then outstanding affected thereby, reduce the amount or amounts required to be credited to the Debt Service Account or Common Reserve Account or any Separate Series Reserve Account.

The bond insurers for all Outstanding Bonds and for the Series 2005 Bonds have certain consent rights in connection with any amendment which may constrain the rights of the Holders described above.

The proof of the giving of any consent required and of the holding of Bonds for the purpose of giving consents shall be made in accordance with the Bond Resolution. It shall not be necessary that the consents of the Holders of the Bonds approve the particular form of wording of the proposed amendment or supplement or of the Supplemental Resolution affecting such amendment or supplement, but it shall be sufficient if such consents approve the substance of the proposed amendment or supplement. After the Holders of the required percentage of Bonds shall have filed their consents to the amending or supplementing of the Bond Resolution pursuant to the Bond Resolution, the City and County shall publish at least once a notice of such amending or supplementing of the Bond Resolution, in *The Bond Buyer*, published in New York, New York, or in lieu of publication in *The Bond Buyer*, in some other newspaper specializing in financial matters as provided for in the Bond Resolution and shall mail a copy of such notice, postage prepaid to each registered Holder of Bonds then Outstanding, at his address, if any, appearing upon the registry books, but failure to mail copies of said notice to any of said Holders shall not affect the validity of the Supplemental Resolution effecting such amendments or supplements or the consent thereto. A record, consisting of the papers required by the Bond Resolution, shall be proof of the matters therein stated until the contrary is proved. No action or proceeding to set aside or invalidate such Supplemental Resolution or any of the proceedings for its adoption shall be instituted or maintained unless such action or proceeding is commenced within 60 days after the publication and mailing of the notice required by the Bond Resolution.

The City and County shall furnish a notice of each amendment or supplement and a copy of the Supplemental Resolution effecting such amendment or supplement to each rating agency which has rated the Bonds at least 15 days prior to the effective day of the Supplemental Resolution.

Discharge of Liens and Pledges; Bonds No Longer Outstanding and Deemed to be Paid

Except as otherwise provided in the Bond Resolution with regard to Option Bonds, the obligations of the City and County under the Bond Resolution and the liens, pledges, charges, trusts, covenants and agreements of the City and County made or provided for in the Bond Resolution, shall be fully discharged and satisfied as to any Bond and such Bond shall no longer be deemed to be Outstanding under the Bond Resolution:

(i) when such Bond shall have been canceled, or shall have been surrendered for cancellation or is subject to cancellation, or shall have been purchased by or behalf of the City and County from moneys held under the Bond Resolution; or

(ii) as to any Bond not canceled or surrendered for cancellation or subject to cancellation or so purchased, when payment of the principal and redemption price (if any) of such Bond, plus interest on such principal to the due date thereof (whether such due date be by reason of maturity or upon redemption or prepayment, or otherwise) either (a) shall have been made or caused to be made in accordance with the terms thereof, or (b) shall have been provided for by irrevocably depositing with the Paying Agent for such Bond, in trust, and irrevocably appropriating and setting aside exclusively for such payment, either (1) moneys sufficient to make such payment or (2) noncallable Refunded Municipal Obligations or noncallable Investment Securities described in item (i) of the definition of Investment Securities as set forth in the Bond Resolution, maturing as to principal and interest in such amount and at such times as will insure, together with any cash deposit, the availability of sufficient moneys to make such payment, whichever the City and County deems to be in its best interest and as verified by an independent nationally recognized firm of certified public accountants in a report delivered to the City and County and the Director of Budget and Fiscal Services, and all necessary and proper fees, compensation and expenses of the Director of Budget and Fiscal Services and the Paying Agents pertaining to the Bond with respect to which such deposit is made shall have been paid or the payment thereof provided for to the satisfaction of the Director of Budget and Fiscal Services and said Paying Agents.

At such time as a Bond shall be deemed to be no longer Outstanding under the Bond Resolution, as aforesaid, such Bond, except for the purposes of any payment from such moneys, Refunded Municipal Obligations or Investment Securities, shall no longer be secured by or entitled to the benefits of the Bond Resolution.

Notwithstanding the foregoing, in the case of a Bond which is to be redeemed or otherwise prepaid prior to its stated maturity, no deposit under clause (b) of subparagraph (ii) of the second preceding paragraph above shall constitute such payment, discharge and satisfaction as aforesaid until such Bond shall have been irrevocably designated for redemption or prepayment and proper notice of such redemption or prepayment shall have been previously given in accordance with the Bond Resolution or provision shall have been irrevocably made for the giving of such notice.

Any such moneys so deposited with the Paying Agents for the Bonds as provided in the Bond Resolution may at the direction of the City and County also be invested and reinvested in Investment Securities, maturing in the amounts and times as set forth in the Bond Resolution. All income from all Refunded Municipal Obligations and Investment Securities in the hands of the Paying Agents which is not required for the payment of the Bonds and interest and premium thereon with respect to which such moneys shall have been so deposited, shall be paid to the City and County for deposit in the Sewer Fund free and clear of any trust, lien, security interest, pledge or assignment securing any Bonds or otherwise existing under the Bond Resolution.

All moneys, Refunded Municipal Obligations or Investment Securities set aside and held in trust pursuant to the provisions of the Bond Resolution for the payment of Bonds (including interest and premium thereof, if any) shall be applied to and used solely for the payment of the particular Bond (including interest and premium thereof, if any) with respect to which such moneys and Investment Securities have been so set aside in trust.

If moneys, Refunded Municipal Obligations or Investment Securities have been deposited or set aside with a Paying Agent pursuant to the Bond Resolution for the payment of a specific Bond and such Bond is deemed to have been paid and to be no longer Outstanding under the Bond Resolution as provided in the defeasance provisions

of the Bond Resolution, but such Bond has not in fact been actually paid in full, no amendment to the defeasance provisions of the Bond Resolution may be made without the consent of the Holder of each Bond affected thereby.

The City and County may at any time surrender to a Paying Agent for a Series of Bonds for cancellation by it any Bonds of such Series previously executed and delivered, which the City and County may have acquired in any manner whatever, and such Bonds upon such surrender for cancellation shall be deemed to be paid and no longer Outstanding under the Bond Resolution.

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Appendix C

Proposed Form of Continuing Disclosure Certificate [Excluding signatures and exhibit to Master Certificate]

MASTER CERTIFICATE OF THE DIRECTOR OF BUDGET AND FISCAL SERVICES OF THE CITY AND COUNTY OF HONOLULU, HAWAII, PROVIDING FOR CONTINUING DISCLOSURE

I, the undersigned, Roy K. Amemiya, Jr., being the duly appointed Director of Budget and Fiscal Services (the "Director") of the City and County of Honolulu, Hawaii (the "City and County"), DO HEREBY CERTIFY as follows:

ARTICLE I PURPOSE AND DEFINITIONS

Section 1.1. *Purpose.* This Certificate shall constitute a written undertaking for the benefit of the Holders of the Bonds, and is being executed and delivered solely to assist the Underwriters in complying with subsection (b)(5) of the Rule.

Section 1.2. *Definitions.* The following terms used in this Certificate shall have the following respective meanings:

"*Annual Financial Information*" means, collectively, (i) the financial information and operating data with respect to the Department for each fiscal year of the Department of the type included in the Series 1998 Official Statement of the City and County under the headings "FINANCIAL STATEMENTS," and "PENDING LITIGATION;" and (ii) the information regarding amendments to this Certificate required pursuant to Sections 3.2(c) and (d) of this Certificate. Audited Financial Statements, if available, or Unaudited Financial Statements shall be included in the Annual Financial Information as described in Section 2.1(c) of this Certificate.

The descriptions contained in clause (i) above of financial information and operating data constituting Annual Financial Information are of general categories of financial information and operating data. When such descriptions include information that no longer can be generated because the operations to which it related have been materially changed or discontinued, a statement to that effect shall be provided in lieu of such information.

"*Audited Financial Statements*" means the annual financial statements, if any, of the Department, audited by such auditor as shall then be required or permitted by State law or the Charter of the City and County. Audited Financial Statements shall be prepared in accordance with GAAP; *provided, however,* that the Department may from time to time, if required by federal or State legal requirements, modify the accounting principles to be followed in preparing its financial statements. The notice of any such modification required by Section 3.2(d) of this Certificate shall include a reference to the specific federal or State law or regulation describing such accounting principles. Prior to the fiscal year ending June 30, 1999, Audited Financial Statements of the Department means the extracts of the audited financial statements of the City and County relating to the Sewer Fund and the Wastewater System Facility Charge Fund.

"*Beneficial Owner*" means any person who (i) has the power, directly or indirectly, to vote or consent with respect to, or dispose of ownership of, any Bonds (including a person who holds Bonds through a nominee, depository or other intermediary), or (ii) is treated as the owner of any Bonds for federal income tax purposes.

"*Bonds*" means any revenue bonds issued by the City and County under and pursuant to Resolution No. 98-193 duly adopted by the City Council of the City and County on November 10, 1998 and identified in a Series Certificate.

“*Counsel*” means Hawkins, Delafield & Wood or other nationally recognized bond counsel or counsel expert in federal securities laws.

“*Department*” means the Department of Environmental Services of the City and County.

“*Director*” means any duly appointed Director of Budget and Fiscal Services of the City and County.

“*GAAP*” means generally accepted accounting principles as prescribed from time to time for governmental units by the Governmental Accounting Standards Board.

“*Holder*” means any person who shall be the registered owner, or his duly authorized attorney-in-fact, representative or assign, of any Bond.

“*Material Event*” means any of the following events with respect to the Bonds, whether relating to the Department or otherwise, if material:

- (1) principal and interest payment delinquencies;
- (2) non-payment related defaults;
- (3) unscheduled draws on debt service reserves reflecting financial difficulties;
- (4) unscheduled draws on credit enhancements reflecting financial difficulties;
- (5) substitution of credit or liquidity providers, or their failure to perform;
- (6) adverse tax opinions or events affecting the tax-exempt status of the security;
- (7) modifications to rights of security holders;
- (8) bond calls;
- (9) defeasances;
- (10) release, substitution, or sale of property securing repayment of the securities; and
- (11) rating changes.

“*Material Event Notice*” means notice of a Material Event.

“*MSRB*” means the Municipal Securities Rulemaking Board established pursuant to Section 15B(b)(1) of the Securities Exchange Act of 1934.

“*NRMSIR*” means, at any time, a then-existing nationally recognized municipal securities information repository, as recognized from time to time by the SEC for the purposes referred to in the Rule. The NRMSIRs as of the date of this Certificate are Bloomberg L.P. (Princeton, NJ), Disclosure, Inc. (Bethesda, MD), Kenny Information Systems (New York, NY), Moody’s Investors Service (New York, NY), and Thomson Municipal Services Inc. (New York, NY). Filing information relating to such NRMSIRs is set forth in Exhibit A hereto.

“*Official Statement*” means the “final official statement,” as defined in paragraph (f)(3) of the Rule.

“*Rule*” means Rule 15c2-12 promulgated by the SEC under the Securities Exchange Act of 1934 (17 CFR Part 240, §240.15c2-12), as in effect on the date of this Certificate, including any official interpretations thereof issued either before or after the effective date of this Certificate which are applicable to this Certificate.

“*SEC*” means the United States Securities and Exchange Commission.

“*Series Certificate*” means any certificate executed by the Director as described in Section 3.3 of this Certificate extending the benefits of this Certificate to the Beneficial Owners, Holders and Underwriters of Bonds of a Series.

“*Series 1998 Official Statement*” means the Official Statement of the City and County relating to its Wastewater System Revenue Bonds (First Bond Resolution), Senior Series 1998.

“*SID*” means, at any time, a then-existing state information depository, if any, as operated or designated as such by or on behalf of the State for the purposes referred to in the Rule. As of the date of this Certificate, there is no SID.

“*State*” means the State of Hawaii.

“*Supplemental Certificate*” means any certificate executed by the Director as described in Section 3.2 of this Certificate amending the provisions of this Certificate.

“*Unaudited Financial Statements*” means the same as Audited Financial Statements, except that they shall not have been audited.

“*Underwriter*” means any original underwriter of a Series of Bonds who is required to comply with the Rule and who is identified in a Series Certificate.

ARTICLE II THE UNDERTAKING

Section 2.1. *Annual Financial Information.* (a) The City and County shall provide Annual Financial Information with respect to each fiscal year of the Department, commencing with the fiscal year ending June 30, 1998, by no later than eight months after the end of the respective fiscal year, to each NRMSIR and the SID. The City and County may provide Annual Financial Information by specific reference to documents (i) either (1) provided to each NRMSIR existing at the time of such reference and the SID or (2) filed with the SEC, or (ii) if such document is an Official Statement, available from the MSRB. The Department may provide Annual Financial Information in one document or multiple documents comprising a package, and at one time or in part from time to time.

(b) The City and County shall provide, in a timely manner, notice of any failure of the City and County to provide the Annual Financial Information by the date specified in subsection (a) above to (i) either the MSRB or each NRMSIR, and (ii) the SID.

(c) If Audited Financial Statements are not provided as part of Annual Financial Information by the date required by Section 2.1(a) of this Certificate, the City and County shall provide (i) as part of the Annual Financial Information, Unaudited Financial Statements in a format similar to the unaudited financial statements contained in the Series 1998 Official Statement under the heading “FINANCIAL STATEMENTS,” and (ii) Audited Financial Statements, when and if available, to each NRMSIR and the SID.

(d) The Department’s current fiscal year is July 1 of a calendar year to June 30 of the succeeding calendar year. The City and County promptly notify (i) each NRMSIR, and (ii) the SID of each change in its fiscal year.

Section 2.2. *Material Event Notices.* (a) If a Material Event occurs, the City and County shall provide, in a timely manner, a Material Event Notice to (i) either the MSRB or each NRMSIR, and (ii) the SID.

(b) Upon any legal defeasance of any Bonds of a Series, the City and County shall provide notice of such defeasance to (i) each NRMSIR or the MSRB and (ii) the SID, which notice shall state whether such Bonds have been defeased to maturity or to redemption and the timing of such maturity or redemption.

(c) Each Material Event Notice shall be so captioned and shall prominently state the title, date and CUSIP numbers of the Bonds.

Section 2.3. *Additional Disclosure Obligations.* The City and County acknowledges and understands that other state and federal laws, including but not limited to the Securities Act of 1933 and Rule 10b-5 promulgated under the Securities Exchange Act of 1934, may apply to the Department, and that under some circumstances compliance with this Certificate, without additional disclosures or other action, may not fully discharge all duties and obligations of the Department under such laws.

Section 2.4. *Additional Information.* Nothing in this Certificate shall be deemed to prevent the City and County from disseminating any other information, using the means of dissemination set forth in this Certificate or any other means of communication, or including any other information in any Annual Financial Information or Material Event Notice, in addition to that which is required by this Certificate. If the City and County chooses to include any information in any Annual Financial Information or Material Event Notice in addition to that which is specifically required by this Certificate, the City and County shall have no obligation under this Certificate to update such information or include it in any future Annual Financial Information or Material Event Notice.

Section 2.5. *No Previous Non-Compliance.* The City and County represents that since July 3, 1995, it has not failed to comply in any material respect with any previous undertaking in a written contract or agreement specified in paragraph (b)(5)(i) of the Rule.

Section 2.6. *Transmission of Information and Notices.* Unless otherwise required by law and, in the City and County's sole determination, subject to technical and economic feasibility, the City and County shall employ such methods of information and notice transmission as shall be requested or recommended by the herein-designated recipients of the Department's information and notices.

ARTICLE III TERMINATION, AMENDMENT, ENFORCEMENT, BENEFICIARIES AND DISSEMINATION AGENT

Section 3.1. *Termination.* (a) The City and County's obligations under this Certificate with respect to the Bonds shall terminate upon (i) a prior redemption or payment in full of all of the Bonds of such Series, or (ii) a legal defeasance of all of the Bonds of such Series.

(b) This Certificate, or any provision of this Certificate, shall be null and void in the event that there is delivered (i) to Director an opinion of Counsel, addressed to the City and County, to the effect that those portions of the Rule which require this Certificate, or any of the provisions of this Certificate, respectively, do not or no longer apply to the Bonds, whether because such portions of the Rule are invalid, have been repealed, or otherwise, as shall be specified in such opinion, and (2) copies of such opinion to each NRMSIR and the SID.

Section 3.2. *Amendment.* (a) This Certificate may be amended by a Supplemental Certificate of the Director, without the consent of the Holders of the Bonds, if all of the following conditions are satisfied:

(1) such amendment is made in connection with a change in circumstances that arises from a change in legal (including regulatory) requirements, a change in law (including rules or regulations) or in interpretations thereof, or a change in the identity, nature or status of the Department or the type of business conducted thereby;

(2) this Certificate as so amended would have complied with the requirements of the Rule as of the date of this Certificate, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances;

(3) there shall have been delivered to the Director, an opinion of Counsel, addressed to the City and County, to the same effect as set forth in clause (2) above;

(4) there shall have been delivered to the Director, an opinion of Counsel or a determination by a person, in each case unaffiliated with the City and County (such as bond counsel) and acceptable to

the City and County, addressed to the City and County, to the effect that the amendment does not materially impair the interests of the Holders of the Bonds; and

(5) the City and County shall have delivered copies of such opinion(s) and amendment to each NRMSIR and the SID.

(b) In addition to subsection (a) above, this Certificate may be amended and any provision of this Certificate may be waived by a Supplemental Certificate of the Director, without the consent of the holders of the Bonds, if all of the following conditions are satisfied: (1) an amendment to the Rule is adopted, or a new or modified official interpretation of the Rule is issued, after the effective date of this Certificate which is applicable to this Certificate, (2) there shall have been delivered to the Director an opinion of Counsel, addressed to the City and County, to the effect that performance by the City and County under this Certificate as so amended or giving effect to such waiver, as the case may be, will not result in a violation of the Rule as amended or officially interpreted and (3) the City and County shall have delivered copies of such opinion and amendment to each NRMSIR and the SID.

(c) To the extent any amendment to this Certificate results in a change in the type of financial information or operating data provided pursuant to this Certificate, the first Annual Financial Information provided thereafter shall include a narrative explanation of the reasons for the amendment and the impact of the change.

(d) If an amendment is made to the accounting principles to be followed in preparing financial statements, the Annual Financial Information for the year in which the change is made shall present a comparison between the financial statements or information prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles. Such comparison shall include a qualitative and, to the extent reasonably feasible, quantitative discussion of the differences in the accounting principles and the impact of the change in the accounting principles on the presentation of the financial information. Notice of such amendment shall be provided by the City and County to (i) either the MSRB or each NRMSIR and (ii) the SID.

Section 3.3. *Benefit; Third-Party Beneficiaries; Enforcement.* (a) By execution of a Series Certificate identifying the Underwriters and the Bonds of a Series, the provisions of this Certificate shall inure solely to the benefit of such Underwriters and the Holders from time to time of such Bonds. Beneficial Owners of such Bonds shall be third party beneficiaries of this Certificate.

(b) Except as provided in this subsection (b), the provisions of this Certificate shall create no rights in any person or entity. The obligations of the City and County to comply with the provisions of this Certificate shall be enforceable by any Holder of outstanding Bonds; *provided, however*, that such right to enforce the provisions of this Certificate shall be limited solely to a right, by action in mandamus or for specific performance, to compel performance of the City and County's obligations under this Certificate. In consideration of the third-party beneficiary status of Beneficial Owners of Bonds pursuant to subsection (a) of this Section, Beneficial Owners shall be deemed to be Holders of Bonds for purposes of this subsection (b).

(c) Any failure by the City and County to perform in accordance with this Certificate shall not constitute a default under any ordinance or resolution of the City and County authorizing the Bonds of any Series or any certificate of the Director providing for the issuance of the Bond of a Series.

(d) This Certificate shall be construed and interpreted in accordance with the laws of the State, and any suits and actions arising out of this Certificate shall be instituted in a court of competent jurisdiction in the State; *provided, however*, that to the extent this Certificate addresses matters of federal securities laws, including the Rule, this Certificate shall be construed in accordance with such federal securities laws and official interpretations thereof.

Section 3.4. *Dissemination Agent.* The Director, on behalf of the Department, shall disseminate the Annual Financial Information, the Audited Financial Statements, the Unaudited Financial Statements, the Material Event Notices and all other information and notices as described in this Certificate. The Director may appoint one or more agents to disseminate such information and notices.

Dated this 23rd day of December, 1998.

SERIES CERTIFICATE OF THE DIRECTOR OF BUDGET AND FISCAL SERVICES OF THE
CITY AND COUNTY OF HONOLULU, PROVIDING FOR CONTINUING DISCLOSURE

I, the undersigned, Mary Patricia Waterhouse, being the duly appointed Director of Budget and Fiscal Services (the "Director") of the City and County of Honolulu (the "City and County"), DO HEREBY CERTIFY that: (i) this Certificate is a Series Certificate as defined in Section 1.1 and described in Section 3.3 of the Master Certificate of the Director of Budget and Fiscal Services of the City and County of Honolulu, Hawaii, Providing for Continuing Disclosure, dated December 23, 1998 (the "Master Certificate"); (ii) Citigroup Global Markets Inc. and UBS Financial Services Inc., as the Underwriters of the \$152,815,000 Wastewater System Revenue Bonds (First Bond Resolution), Senior Series 2005A and 2005B of the City and County, to be dated the date of issuance thereof (the "Series 2005 Bonds"), shall be beneficiaries of the Master Certificate; (iii) the Holders of the Series 2005 Bonds shall also beneficiaries of the Master Certificate; (iv) the Beneficial Owners of Series 2005 Bonds shall third-party beneficiaries of the Master Certificate; and (v) all capitalized terms used herein shall have the respective meanings as defined in the Master Certificate.

The NRMSIRs as of the date of this Series Certificate are set forth at:

www.sec.gov/info/consumer/nrmsir.htm.

Dated this July __, 2005.

Director of Budget and Fiscal Services
City and County of Honolulu

The above and foregoing certificate
is hereby approved as to form and legality
this July __, 2005.

Corporation Counsel
City and County of Honolulu

Appendix D

Proposed Form of Opinion of Bond Counsel

[Closing Date]

City and County of Honolulu
Honolulu, Hawaii

Re: City and County of Honolulu Wastewater System
Revenue Bonds (First Bond Resolution) Senior Series 2005A and 2005B
(Final Opinion)

Ladies and Gentlemen:

We have acted as bond counsel in connection with the issuance by the City and County of Honolulu (the “City and County”) of \$152,815,000 aggregate principal amount of Wastewater System Revenue Bonds (First Bond Resolution) Senior Series 2005A and 2005B (the “Bonds”), pursuant to the provisions of Chapter 49, Hawaii Revised Statutes (the “Act”), the City Charter, a Bond Resolution and a Series Resolution of the City and County (collectively, the “Resolution”), and a Series Certificate of the Director of Budget and Fiscal Services of the City and County (the “Certificate”). Terms not otherwise defined herein shall have the meanings assigned to them in the Certificate.

In such connection, we have reviewed the Resolution, the Certificate, the Tax Certificate of the City and County, dated the date hereof (the “Tax Certificate”), an opinion of the Corporation Counsel of the City and County, certificates of the City and County and others, and such other documents, opinions and matters to the extent we deemed necessary to render the opinions set forth herein.

Certain agreements, requirements and procedures contained or referred to in the Resolution, the Certificate, the Tax Certificate and other relevant documents may be changed and certain actions (including, without limitation, refunding of the Bonds), may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. No opinion is expressed herein as to any Bond or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of counsel other than ourselves.

The opinions expressed herein are based on an analysis of existing laws, regulations, rulings and court decisions and cover certain matters not directly addressed by such authorities. Such opinions may be affected by actions taken or omitted or events occurring after the date hereof. We have not undertaken to determine, or to inform any person, whether any such actions are taken or omitted or events do occur or any other matters come to our attention after the date hereof. Our engagement with respect to the Bonds has concluded with their issuance, and we disclaim any obligation to update this letter. We have assumed the genuineness of all documents and signatures presented to us (whether as originals or as copies) and the due and legal execution and delivery thereof by, and validity against, any parties other than the City and County. We have assumed, without undertaking to verify, the accuracy of the factual matters represented, warranted or certified in the documents, and of the legal conclusions contained in the opinions, referred to in the second paragraph hereof. Furthermore, we have assumed compliance with all covenants and agreements contained in the Resolution, the Certificate and the Tax Certificate, including (without limitation) covenants and agreements compliance with which is necessary to assure that future actions, omissions or events will not cause interest on the Bonds to be included in gross income for federal income tax purposes. We call attention to the fact that the rights and obligations under the Bonds, the Resolution, the Certificate and the Tax Certificate and their enforceability may be subject to bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors’ rights, to the application of equitable principles, to the exercise of judicial discretion in appropriate cases, and to the limitations

on legal remedies against counties in the State of Hawaii. We express no opinion with respect to any indemnification, contribution, penalty, choice of law, choice of forum, waiver or severability provisions contained in the foregoing documents, nor do we express any opinion with respect to the state or quality of title to or interest in any assets described in or subject to the lien of the Resolution or the accuracy or sufficiency of the description contained therein of, or the remedies available to enforce liens on any such assets. Finally, we undertake no responsibility for the accuracy, completeness or fairness of the Official Statement or other offering material relating to the Bonds and express no opinion with respect thereto.

Based on and subject to the foregoing, and in reliance thereon, as of the date hereof, we are of the following opinions:

1. The Bonds constitute valid and binding special obligations of the City and County.
2. The Bonds are payable solely from and are secured by the Net Revenues and other funds pledged to the payment thereof pursuant to the Resolution, subject to the provisions of the Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Resolution.
3. The Resolution has been duly adopted and constitutes the valid and binding obligation of the City and County, and the Certificate has been duly executed and delivered and constitutes the valid and binding obligation of the City and County.
4. Interest on the Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, and the Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Interest on the Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although we observe that it is included in adjusted current earnings when calculating corporate alternative minimum taxable income. We express no opinion regarding other tax consequences related to the ownership or disposition of, or the accrual or receipt of interest on, the Bonds.

Faithfully yours,

ORRICK, HERRINGTON & SUTCLIFFE LLP

per

Appendix E

Specimen Bond Insurance Policy

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Financial Guaranty Insurance Company
 125 Park Avenue
 New York, NY 10017
 T 212-312-3000
 T 800-352-0001

Municipal Bond New Issue Insurance Policy

Issuer:	Policy Number:
	Control Number: 0010001
Bonds:	Premium:

Financial Guaranty Insurance Company ("Financial Guaranty"), a New York stock insurance company, in consideration of the payment of the premium and subject to the terms of this Policy, hereby unconditionally and irrevocably agrees to pay to U.S. Bank Trust National Association or its successor, as its agent (the "Fiscal Agent"), for the benefit of Bondholders, that portion of the principal and interest on the above-described debt obligations (the "Bonds") which shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

Financial Guaranty will make such payments to the Fiscal Agent on the date such principal or interest becomes Due for Payment or on the Business Day next following the day on which Financial Guaranty shall have received Notice of Nonpayment, whichever is later. The Fiscal Agent will disburse to the Bondholder the face amount of principal and interest which is then Due for Payment but is unpaid by reason of Nonpayment by the Issuer but only upon receipt by the Fiscal Agent, in form reasonably satisfactory to it, of (i) evidence of the Bondholder's right to receive payment of the principal or interest Due for Payment and (ii) evidence, including any appropriate instruments of assignment, that all of the Bondholder's rights to payment of such principal or interest Due for Payment shall thereupon vest in Financial Guaranty. Upon such disbursement, Financial Guaranty shall become the owner of the Bond, appurtenant coupon or right to payment of principal or interest on such Bond and shall be fully subrogated to all of the Bondholder's rights thereunder, including the Bondholder's right to payment thereof.

This Policy is non-cancellable for any reason. The premium on this Policy is not refundable for any reason, including the payment of the Bonds prior to their maturity. This Policy does not insure against loss of any prepayment premium which may at any time be payable with respect to any Bond.

As used herein, the term "Bondholder" means, as to a particular Bond, the person other than the Issuer who, at the time of Nonpayment, is entitled under the terms of such Bond to payment thereof. "Due for Payment" means, when referring to the principal of a Bond, the stated maturity date thereof or the date on which the same shall have been duly called for mandatory sinking fund redemption and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity and means, when referring to interest on a Bond, the stated date for payment of interest. "Nonpayment" in respect of a Bond means the failure of the Issuer to have provided sufficient funds to the paying agent for payment in full of all



Financial Guaranty Insurance Company
 125 Park Avenue
 New York, NY 10017
 T 212-312-3000
 T 800-352-0001

Municipal Bond New Issue Insurance Policy

principal and interest Due for Payment on such Bond. "Notice" means telephonic or telegraphic notice, subsequently confirmed in writing, or written notice by registered or certified mail, from a Bondholder or a paying agent for the Bonds to Financial Guaranty. "Business Day" means any day other than a Saturday, Sunday or a day on which the Fiscal Agent is authorized by law to remain closed.

In Witness Whereof, Financial Guaranty has caused this Policy to be affixed with its corporate seal and to be signed by its duly authorized officer in facsimile to become effective and binding upon Financial Guaranty by virtue of the countersignature of its duly authorized representative.

SPECIMEN

President

Effective Date:

Authorized Representative

U.S. Bank Trust National Association, acknowledges that it has agreed to perform the duties of Fiscal Agent under this Policy.

Authorized Officer



Financial Guaranty Insurance Company
 125 Park Avenue
 New York, NY 10017
 T 212-312-3000
 T 800-352-0001

Endorsement
 To Financial Guaranty Insurance Company
 Insurance Policy

Policy Number:

Control Number: 0010001

It is further understood that the term "Nonpayment" in respect of a Bond includes any payment of principal or interest made to a Bondholder by or on behalf of the issuer of such Bond which has been recovered from such Bondholder pursuant to the United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final, nonappealable order of a court having competent jurisdiction.

NOTHING HEREIN SHALL BE CONSTRUED TO WAIVE, ALTER, REDUCE OR AMEND COVERAGE IN ANY OTHER SECTION OF THE POLICY. IF FOUND CONTRARY TO THE POLICY LANGUAGE, THE TERMS OF THIS ENDORSEMENT SUPERSEDE THE POLICY LANGUAGE.

In Witness Whereof, Financial Guaranty has caused this Endorsement to be affixed with its corporate seal and to be signed by its duly authorized officer in facsimile to become effective and binding upon Financial Guaranty by virtue of the countersignature of its duly authorized representative.

President

Effective Date:

Authorized Representative

Acknowledged as of the Effective Date written above:

Authorized Officer
U.S. Bank Trust National Association, as Fiscal Agent

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